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Welcome

With Sky's 4K service starting this month and Ultra HD Blu-ray going from strength to strength, many of you will be looking to give your home cinema system a 4K boost. And it's a good time to do so, too, with plenty of affordable hardware options hitting shop shelves.



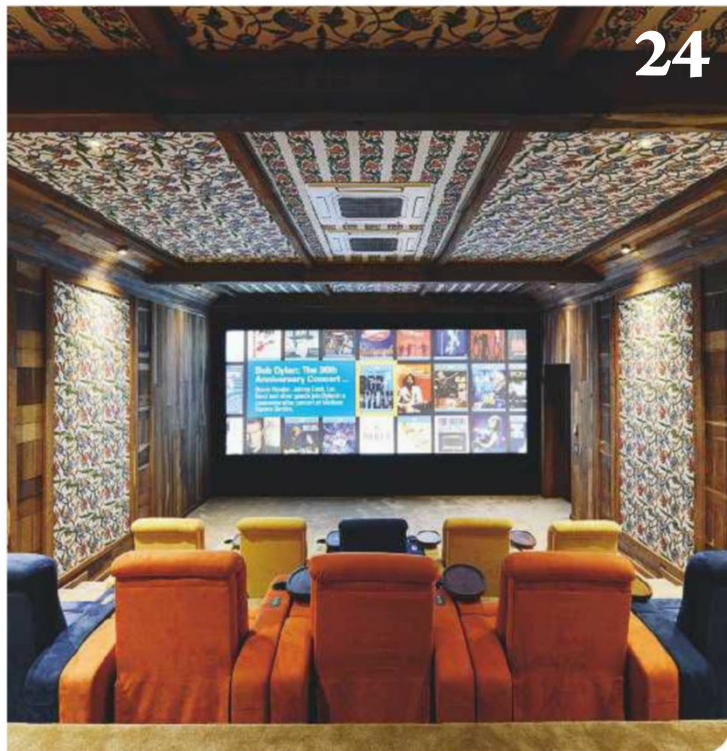
Need a new HDR TV? Check out Philips' well-priced 65in PUS7601 (p36) or Panasonic's gorgeous 58in DX802 (p68). Want a leading-edge AV amp that doesn't break the bank? Denon's AVR-X2300W (p44) could be your saviour. Ready to embrace Dolby Atmos? Samsung's innovative HW-K950 soundbar system (p62) works multichannel wonders without taking over your viewing room with cable clutter. These are just a few of the tantalising system upgrades auditioned this issue.

Oh, and **for design inspiration for your movie den, check out the award-winning cinema rooms** starting on p24. They'll blow your mind!

Mark Craven
Editor



MENU



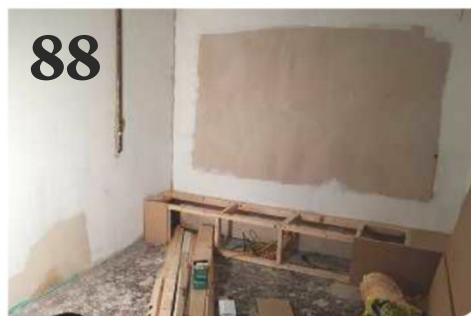
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The UK's most experienced TV tester cut his teeth as an early HCC staffer



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10 of the best (non-Bond) Connery flicks to add to your Blu-ray collection

LG OLED TV 4K



NOT JUST A NEW TV. A WHOLE NEW CATEGORY OF TELEVISION.



OLED's next generation pixel construction allows for unique screen architecture which is so light and thin it can be bonded to a transparent piece of glass.

This stunning television produces an incredible picture with infinite contrast that is complimented by an innovative sound bar stand that produces superb audio.

A masterful television from LG's award winning OLED TV range.

lg.com/uk/discoveroled



HDR 4K
WITH
DOLBY VISION

What the Experts Say



LG OLEDC6V
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LG OLEDE6V
JUNE 2016



LG EG960V
JUNE 2015



LG EC970V

Model shown E6

BULLETIN

→ **NEWS HIGHLIGHTS** HDR TV Agreement reached on broadcast TV standard
SKY 4K content to launch this month **YAMAHA** MusicCast range adds ultra compact audio kit
ACOUSTIC ENERGY Third-generation Aego speakers break cover **NEWS X10** The hottest stories
 in bite-sized chunks **CAPTAIN AMERICA: CIVIL WAR** Big brawl hits Blu-ray & MORE!

Entry-level Loewe

Loewe One → www.loewe.tv/uk

QUALITY REBUILD

The farce awakens in the latest *LEGO Star Wars* game, see p100



Positioned by the high-end brand as an affordable second screen, the Loewe One range consists of Full HD 40in and 4K/Ultra HD 55in flatscreens (priced around £850 and £1,350, respectively), with a 65in model due to follow at a later date. The two current sets employ rear-firing 2 x 20W stereo speakers and offer a smart portal with access to Amazon Video and Tidal apps, amongst others. The TVs ship with a swivelling table base; a floorstand is an optional alternative.

HCC ONLINE...

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Standing up for audio

Teufel Varion → www.teufelaudio.co.uk

Flexibility is the ambition when it comes to Teufel's new Varion multi-driver speaker. Available in a number of 2.1 and 5.1-channel packages, the slim enclosure is designed to be placed either horizontally or vertically, with each Varion housing six 2in midrange drivers and a 0.75in tweeter arranged in a D'Appolito configuration inside its 7cm-wide body. Prices begin at £320/£560 for standard 2.1/5.1 arrays. Other bundles add extra AV kit, with Teufel offering choices of its CoreStation AV receiver, a wireless subwoofer module and a Raumfeld network audio player.

Bank-busting Blu-ray deck



McIntosh has revealed that it is adding a new high-end Blu-ray player to its range of handcrafted

AV kit. The MVP901's hefty \$5,500 price tag (around £4,250) gets you 4K upscaling of BD/DVD platters, various image adjustments and 'ultra-fast' disc-loading. And, as you'd expect from McIntosh, the MVP901 promises to be a bit of a music maestro – SACD and DVD-Audio are both supported and other sources can be enjoyed via its trio of USB inputs and Ethernet networking. www.mcintoshlabs.com

Second-gen ULED screen



Hisense has outed its latest 'ULED' 4K premium flatscreen. As with last year's XT910, the M7000 supports High

Dynamic Range and uses a combination of local backlight dimming and custom processing to fettle its Ultra HD images. Smart functionality is powered by a quad-core processor and offers BBC iPlayer, Amazon Video, 4K Netflix and Wuaki.tv apps, as well as a built-in web browser. The M7000 is available from John Lewis in 55in (£800) and 65in (£1,200) screen sizes. www.hisense.co.uk

HDR TV chaos resolved?

Industry body announces standard for TV production and distribution

The lack of an agreed standard for making HDR (High Dynamic Range) programmes, which has stalled broadcast 4K services, looks to have been overcome, with the ITU (International Telecommunication Union) announcing parameters for the production and distribution of HDR TV.

Known as ITU-R HDR-TV BT.2100, it builds on the UHD colour space recommendation BT.2020, approved in October last year and now universally adopted by content and hardware providers.

BT.2100 resolves issues regarding backwards compatibility, through the adoption of the BBC/NHK developed Hybrid Log-Gamma (HLG) standard, and mandates image quality through Perceptual Quantization (PQ). Of PQ, the ITU says it 'achieves a very wide range of brightness levels using a transfer function that is finely tuned to match the human visual system.' Translated, that means more realistic images, then.

The new recommendation allows TV producers to make HDR content in three resolutions: Full HD, 4K (3,840 x 2,160) and 8K (7,680 x 4,320), with extended colour gamut and frame-rates dictated by BT.2020. The Hybrid Log-Gamma (HLG) specification ensures compatibility with 4K and 1080p SDR displays.

The announcement will come as a relief to many in the broadcast industry. Matthew Goldman, senior VP of technology at Ericsson, sits on multiple standards boards in regard to HD. 'We have a limited time frame to get this done,' he says. 'If we don't get standards in place, we'll have



BT's 4K broadcast team

a repeat of what happened with 3D. And we don't want that again.'

Anyone for HDR tennis?

Andy King, head of technology for BBC Television, believes it's too early to discuss the corporation's 4K HDR programme plans,

although he says 'natural history discussions are featuring very heavily.' He adds the BBC sees 2016 as 'very much a year of standards.'

That said, there are unconfirmed reports that the BBC has been busy building a library of 4K content, prior to the launch of a dedicated UHD channel in 2017. One possible launch fixture being mooted is the Wimbledon Tennis Championships. The venue has been a proving ground for new technology and the BBC began 4K trials at the All England Club back in 2013.

According to Ofcom, some 30 Ultra HD channels could be delivered to UK homes via satellite by 2025 without requiring additional spectrum. However Astra MD Mike Chandler says the likelihood is that there will be far more than that.

While the specification is a dry read aimed at pros, there are some tidbits for home enthusiasts. The ITU recommended viewing environment



suggests that background brightness in a viewing room should not exceed five Lumens and critical viewing distance is less than with Full HD – see p122 for more.

Playlist...

Team HCC spins up its disc picks of the month

Deadpool (Ultra HD BD)

This nutty superhero flick isn't the best-looking 4K platter around, but Fox's first Dolby Atmos track ensures that it sounds sensational.



High-Rise (Region B BD)



This bigscreen adaptation of J.G. Ballard's cult novel scores an impressive UK Blu-ray platter that boasts impressive AV credentials and an enjoyable chat-track.

The Five (Region B BD)



The brainchild of popular novelist Harlan Coben, this 10-part crime drama serves up plenty of hi-def thrills on BD.

Trancers III: Deth Lives (Region B BD)



Enjoyable B-movie three-quel gets a fresh lease of life courtesy of this splendid hi-def platter.

Bone Tomahawk (All-region BD)



This unforgettable mix of *The Searchers* and *Cannibal Holocaust* is a cult classic in the making...

At the 'plex...

Heading out to see a flick?
Catch these this month

Suicide Squad



August 5: The third film in the DC Extended Universe shifts the focus away from superheroes and onto a team of imprisoned villains forced to do black ops work for the US government. Studio Warner Bros is hoping it gets a better fan reception than *Batman v Superman*.

Lights Out



August 19: Aspiring filmmaker David F. Sandberg expands his creepy short of the same name (check it out on YouTube) into a feature-length shocker about a family haunted by a spirit which appears when the lights go out.

Popstar: Never Stop Never Stopping

August 26: Adam Samberg does his best Justin Bieber impression in this satirical look at celebrity culture and the music industry from online comedy superstars The Lonely Island.

Sky confirms UHD launch

Ultra HD content kicks off with Premier League and movie premieres

Sky has finally announced details of the first wave of 4K programming that will be supported by its Sky Q Silver hardware, with an August 13 launch date to coincide with the start of the new Premier League football season. No surprise then that Ultra HD content will include sports, plus films, drama/music entertainment and even some David Attenborough natural history footage. Material will be spread across the satcaster's platform, as opposed to a dedicated 4K channel.

Promised movies during the first year include world premieres of *Spectre*, *The Revenant* and *The Martian*, plus back-catalogue material such as *Minority Report*, *The Godfather*, *The Da Vinci Code* and *Spider-Man* trilogy. There will be themed 4K movie collections (Blockbusters, Oscar Winners, etc) and the option of renting new release flicks from the Sky Store.

Additionally, Sky will offer around 30 hours of natural history and documentaries – including 'scenes' from Attenborough's 2015 series *Conquest of the Skies* – plus a quintet of new dramas led by the Jude Law vehicle *The Young Pope*, a joint production with HBO and Canal+.

And sports-wise, Sky will hope to challenge BT's Ultra HD Sports channel with 124 live Premier League 4K matches, beginning with Hull vs Leicester City on August 13. Meanwhile, Formula 1 motor racing will be on the UHD starting grid for the 2017 season.

There's no word yet on other 4K sports programming, such as golf and rugby. However, Sky has stated that there will be 'more sports, movies, documentaries and drama' arriving later.



Luke Bradley-Jones: 'With the introduction of an unrivalled lineup of Ultra HD TV, the Sky Q service is going to get even better'

Existing Sky Q owners are told they can adjust their hardware settings now (by selecting 2,160p output in the audio-visual menu)

to make sure everything is set for the 4K launch. Alternatively, you will be prompted to make this change when attempting to view UHD content.

Where to look

As we reported in the last issue of *HCC*, Sky's Ultra HD offering will not be delivered in HDR – the company is reserving that technology for a second 4K phase.

Finding programming will be done in a variety of ways. With live sports content – sent by satellite – an onscreen prompt will notify users that an Ultra HD broadcast is also available. Viewers can change between watching the HD and Ultra HD broadcast using the Mini Guide. There will also be a dedicated Ultra HD tab in Sky's On Demand, Sky Store and Box Sets sections for 'net-delivered material.

'With Sky Q, we created the world's best TV experience,' claims Luke Bradley-Jones, Director of TV & Content Products. 'Now with the introduction of an unrivalled lineup of Ultra HD TV, the service is going to get even better... Whether you're a football fan, movie buff, natural history enthusiast or drama junkie, customers looking for the next-generation of TV viewing will love it.'



The Martian will be among the first 4K movies on Sky

Epson announces new PJ trio

LCD models with HDR and Ultra HD Blu-ray support to debut in September

The EH-TW9300W includes Epson's 4K WiHD transmitter, enabling wireless source connection



LCD projector specialist Epson has announced three new models to launch this September that will support playback of HDR and Ultra HD Blu-ray movies. The EH-TW7300, EH-TW9300 and

EH-TW9300W (pictured) claim to deliver a wide colour gamut (100 per cent of DCI-P3 colour space), and support HDR 10.

All three offer dual HDMI inputs, one supporting HDCP 2.2, the other pegged at HDCP 1.4. So Ultra HD Blu-ray is on the menu, although rather than being

native 4K devices, they use Epson's 4K enhancement tech in conjunction with Full HD optics, in a similar fashion to JVC's eShift models.

Claimed brightness is 2,300 Lumens for the EH-TW7300 and 2,500 Lumens for the EH-TW9300 and EH-TW9300W. Contrast is rated at 160,000:1 for the EH-TW7300, rising to 1,000,000:1 for the two higher-end models. Lamp life for all three is rated at 5,000 hours when set to Eco mode.

Suggested pricing for the projectors is £2,200 for the EH-TW7300, £3,000 for the EH-TW9300 and £3,300 for the EH-TW9300W.

www.epson.co.uk



MEDIA 7000

2.1 Audio System

With the new
Q AVA Stereo AV Amplifier

The Q Acoustics Media 7000 is a beautifully styled, small yet hugely powerful music and home cinema 2.1 Bluetooth amplifier and speaker package.

The heart of the Media 7000 is Q Acoustics' new dedicated Q AVA stereo amplifier with a precision on-board DAC (digital to analogue converter), twin optical digital inputs, as well as analogue and advanced wireless Bluetooth connectivity.

Designed for the ultimate music and movie experience, the dedicated **MoviEQ™** button delivers ultimate movie sound with cinematic bass.

The amplifier features signal sensing automatic source selection and can be controlled by most Sky and Virgin remote controls as well as its own small and neat IR handset.

Register your interest at:

www.QAcoustics.co.uk/HCC



Media 7000 2.1 Audio System contains:

7000LRi speakers, 7070Si and the Q AVA Stereo Amplifier

Available in:



Black



White

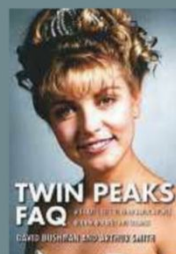
Q Acoustics 7000i Awards



Extras...

Small items that could make a big impression...

Twin Peaks FAQ



With David Lynch and Mark Frost's surreal and seductive series *Twin Peaks* set to return to TV screens in

2017, this fascinating look at the pop culture phenomenon is a great way of getting back up to speed. Both witty and insightful, the *Twin Peaks FAQ* (£20) delivers more than enough fresh insights into the cult TV show's production, characters, spin-off film, symbols and mysteries to make it an indispensable guide for die-hard fans and newbies alike.

Aliens: Colonial Marines Pulse Rifle



It's one of the most iconic movie weapons of all time, and now you can have your very own 1:1 scale replica courtesy of Hollywood Collectibles Group. Limited to just 750 pieces worldwide and costing around £500, this replica is modelled after one of the few surviving 'Hero' props from the film, measures 27in long, weighs 2.5kg and comes with a themed table-top display stand.

Funko Pop! Cthulhu



Fancy giving an Eldritch God a new home? This dinky, super-cute version of H.P. Lovecraft's most terrifying creation is the latest addition to Funko's massive range of vinyl figurines, and can be yours for just £9. All together now: 'Ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl fhtagn'...

Yamaha thinks smaller

New wave of MusicCast kit includes compact amp for TV and hi-fi

Yamaha has unveiled a new ultra-compact audio range which it believes could transform the way you listen to TV. Amid MotoGP superbikes at the Yamaha Motor facility in Milan, the brand previewed a range of racy new additions to its MusicCast multiroom lineup.

Arguably the most exciting new arrivals were the MusicCast-enabled WXA-50 wireless streaming amplifier (£400) and WXC-50 pre-amp (£300).

Utilising a versatile compact design, the pair can function either as a standalone music system, or enhance an AV setup. Both components support 24-bit/192kHz hi-res audio streaming, with AirPlay compatibility and Bluetooth.

The pre-amp is particularly clever, in that it can be used to bring an existing AV receiver into a MusicCast ecosystem. As well as analogue and digital inputs/outputs, it features two-way streaming, playing back audio from other sources on the network, or sending audio wirelessly to connected MusicCast sources. TV audio, Blu-ray and streaming services can therefore be heard in any connected room.

The matching WXA-50 amplifier is slim enough to be placed behind a wall-mounted TV on a shared VESA mount. Hooked up to a pair of bookshelf speakers this not only dramatically improves telly audio, but also turns the TV into a MusicCast client.

With the feet removed, the amp is also compact enough to fit a 1U system rack, where it can be used to power a whole-home audio system. Product specialist Chris Wray told *HCC*: 'This allows it to function as a rival to Sonos and Denon HEOS in smart homes and custom installs.'

HCC heard a preview of the *bijou* system, which looks cool and delivers a high level of audio clarity. Rated at 70W per channel (into six Ohms), the amp easily outperforms the kind of powerplant found in a typical soundbar.

New 'bars break cover

Yamaha also used its Milan showcase to introduce a new Digital



Chris Wray: 'The compact WXA-50 amp can function as a rival to Sonos and Denon HEOS in smart homes and custom installs'

Sound Projector, the £900 YSP-2700, as well as a regular soundbar, the £350 YAS-306.

The latter uses Air Surround Xtreme tech to simulate a surround experience, but only sports traditional drivers.

Most likely, it's the higher-end model which will intrigue enthusiasts – the YSP-2700 utilises an array of 16 controllable drivers to steer and reflect sound around your listening room. A mic is provided to calibrate this Intellibeam tech to the specifics of your environment. The YSP-2700 ships with a wireless sub.

Connectivity includes three HDMI inputs, all of which support 4K sources with HDCP 2.2, making it suitable for use with Blu-ray players, media streamers and games consoles. The YSP-2700 includes Apple Airplay and Bluetooth, and has Spotify on board.

There's a heap of audio processing offered, too, from Yamaha's Cinema DSP enhanced soundfields (choose from ten different programmes for films, music and games), to a Compressed Music Enhancer that adds sonic body to low-bitrate MP3s.

Tickling the multiroom ivories

While integration of wireless multiroom with AV gear is fast becoming the norm, Yamaha surprised with the news that it was building a MusicCast bridge between its home audio products and professional piano range.

Enter the new Disklavier ENSPIRE, the world's first multiroom player piano! When used with Yamaha's Disklavier Radio streaming service, a self-playing function with content provided by the likes of Jamie

Cullum and Sarah McLachlan, musical recordings can be heard on any MusicCast connected audio system. Users have access to around 500 tunes via an app.



Yamaha's smallscale WXC-50 pre-amp brings MusicCast to an existing hi-fi setup

This month's top 10 news stories in handy, bite-sized chunks...



1 Humax plays with PVR

Humax has set out to make life even easier for users of its FVP-4000T Freeview Play HD PVR with a firmware update. As well as redesigning the Humax Home Page, it boosts the number of channels shown on the EPG from five to seven and makes the process of recording a series quicker. The update also promises to improve the stability of the device's Wi-Fi connection.

2 TV age gap

A recent Ofcom report has found people under 25 years of age are watching in the region of 27 per cent less broadcast TV than they were in 2010, having embraced on-demand services instead. The fall was only around five per cent in the 55-64 age category, which Ofcom claims highlights the 'widening gap between the viewing habits of the youngest and oldest audiences.'

3 Batman embraces VR

Warner Bros. Interactive Entertainment is giving PlayStation 4 owners the chance to 'be' Batman this October. The PS4-exclusive *Batman: Arkham VR* is a new murder-mystery game from developer Rocksteady Studios that aims to use the console's forthcoming virtual reality tech to 'fully immerse players in the role of the World's Greatest Detective.'

4 Cinema chain sold

Odeon & UCI Cinema Group has been sold to US cinema chain AMC Entertainment in a deal worth £921million. AMC is owned by Chinese conglomerate Dalian Wanda, the world's biggest movie theatre operator, which also runs screens in China and the Hoyts chain in Australia.

5 Pirates Netflix and chill...

New figures released by the Intellectual Property Office show that Netflix and other film/music sites are having a 'chilling effect' on online piracy, with the number of people consuming exclusively from legal online sources increasing by 44 per cent since last year. Sadly, the figures also show that roughly one in 20 are still exclusively accessing illegal content online. Tsk.

6 Raumfeld issues app update

Raumfeld is bringing new features to its multiroom speaker range via a free software update. These include the ability to turn the speakers on or off via the Raumfeld app and a new Eco mode that automatically switches them to an energy-saving standby setting when no signal is received. Android users also get a new widget that lets them control playback without having to first open the Raumfeld app.

7 Music download sales down

US sales tracking company Nielsen claims that single-track music downloads could only muster sales of 405m for the first half of 2016, a drop of 24 per cent year-on-year. It's the worst fall on record for the format and shows the immense impact streaming is having on sales.

8 Bowie back on bigscreen

StudioCanal will be celebrating the 40th anniversary of *The Man Who Fell to Earth* with a new 4K restoration of Nicolas Roeg's iconic film. The restoration will debut at UK cinemas on September 9, before hitting Blu-ray on October 10.

9 Space race

Empire Cinemas has been busy polling the British public to find the most realistic 'space film' ever made. The winner, with a whopping 29 per cent was *Apollo 13*. Which is a good thing, too, seeing as how it actually happened. Meanwhile, the beast from *Alien* topped the poll of the most realistic aliens. Erm, okay.

10 Kung Fu saga continues...

Last month we stuck the boot into Fox for saddling the UK *Kung Fu Panda 3* Blu-ray with a 'lossy' DTS 5.1 mix instead of the DTS-HD MA 7.1 track that appears on the US disc. But we've since discovered that you can get the DTS-HD MA 7.1 mix from the UK disc – but only if you play it in a Region A player. Incredibly, it isn't the first time Fox UK/DreamWorks has done something like this, as playing its 2014 *How to Train Your Dragon 2* Blu-ray in a Region A deck revealed more extras than when spun in a Region B-locked machine.



Premiere...

What's happening in the world of TV and films...

ITV wields new Weapon



ITV has snagged the UK broadcast rights to Fox's upcoming *Lethal Weapon* TV series. A reboot of the popular buddy-cop film franchise, the new show sees Damon Wayans step into Danny Glover's shoes as Roger Murtaugh, while Clayne Crawford takes over from Mel Gibson as Martin Riggs.

Rapace back for more?

Despite claims from Ridley Scott that she wouldn't be involved in the director's forthcoming *Prometheus* sequel *Alien: Covenant*, actress Noomi Rapace has been spotted on the film's set in Australia, where she has apparently completed a couple of weeks' worth of shooting.

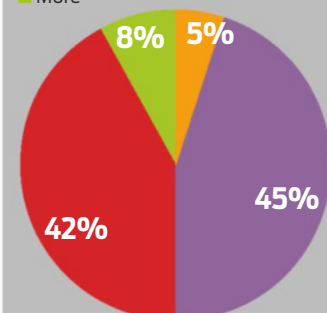
HBO scratches Vinyl

HBO's new head of programming Casey Bloys has cancelled the much-hyped Martin Scorsese and Mick Jagger-produced music biz drama *Vinyl* after just one season. It's also been heavily hinted that *True Detective* is extremely unlikely to return for a third run.

We asked...

How many channels is your home cinema?

- Soundbar
- 5 + 1 (or more) subwoofers
- 7 + 1 (or more) subwoofers
- More



Results from www.homecinemachoice.com
Go online for more polling action



Divided we fall...

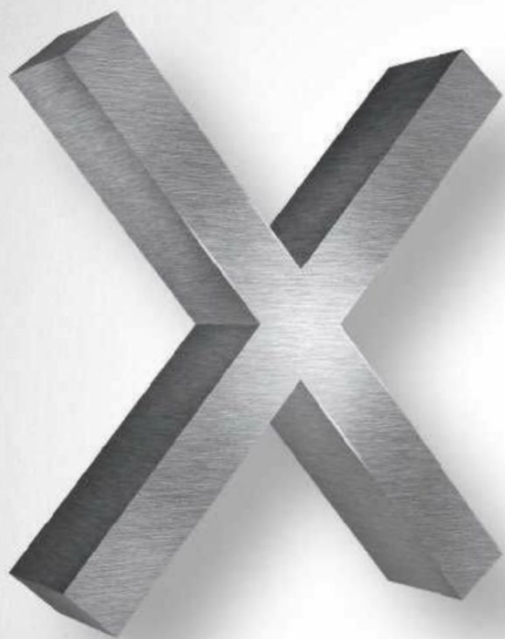
Captain America: Civil War → Walt Disney Home Entertainment
→ All-region BD & R2 DVD



Taking a break from beating up supervillains, the heroes of the Marvel Cinematic Universe take the fight to one another in *Captain America: Civil War*. This superior superhero blockbuster arrives on DVD and Blu-ray (3D and 2D) on September 5, with the HD platters joined by a filmmakers' commentary; a two-part *Making of...* documentary; deleted and extended scenes; two *Road to Civil War* featurettes; a gag reel; and an exclusive sneak peek at Marvel's next comic book epic, *Doctor Strange*.



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Face to Face

Topics of discussion on the HCC Facebook page

On the idea of an HD DVD/Blu combi deck...

All HD DVD titles have been upgraded to Blu-ray so it's pointless. Plus no HD DVD movie ever came out with lossless audio so nothing to appeal for that format in a universal player.

Gabriel Ricardo

HD DVD? No thanks. But my Denon DBT-3313UD covers all my Blu-ray, SACD, DVD-Audio and FLAC needs. Plus it's region-free.

Barrie Head

Next thing is someone will want a Blu-ray spinner that is compatible with vinyl. I, too, have several SACDs and still buy them from Amazon. HD DVD compatibility is a fair ask. Multi-region Blu-ray would be better, especially as UHD BD is region-free!

Steve Old

Hell yes! It would truly be a universal disc player!

Bryan Peck

What you're watching on your home cinema...



The Man from U.N.C.L.E. on Blu-ray – enjoyed it!

Matt Greaves

Season One of *Star Trek: The Next Generation*.

Sarah Thana

Star Trek Into Darkness and *Hail, Caesar!*

Chris Sayles

Only God Forgives. A bonkers film!

Robert Corrigan

A new arrival for my LaserDisc collection – 1993's *Body Snatchers*.

Andy Summers

Bone Tomahawk. Gulp.

Steve Michael Clark



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Back of the 'net

Trailers, technology and more to check out on the web



Globe-trotting Statham

Jason Statham fans haven't been clamouring for a sequel to 2011's *The Mechanic*, but are getting one anyway. This trailer tells you pretty much all you need to know – Britain's Greatest Export gads around in sunny climes, punches some people, and tries to compensate for some obvious CGI. We'll still watch it.

Youtu.be/QF903RaKLvs



Whet your appetite

This behind-the-scenes video will help build your excitement for this year's *Rogue One: A Star Wars Story*, and hints that the finished flick will lean towards in-camera effects and huge locations as opposed to green-screen magic. 'It's a bit like being a kid again,' gushes Brit director Gareth Edwards.

Youtu.be/HUub_zpdyDpU



Jack's back!

Another movie sequel, this time with Tom Cruise returning to the character of itinerant do-gooder Jack Reacher, first seen in the outrageously popular novels by Lee Child. From this debut trailer... *Never Go Back* looks a lot like the first *Jack Reacher* movie, which is probably no bad thing.

Youtu.be/aoCP_JHzBUM



Grab a Google add-on

Cambridge Audio is rewarding new and existing buyers of its CXU Blu-ray player with a free Google Chromecast, which adds a level of smart functionality – including Netflix and iPlayer streaming – to its chunky, funky disc-spinner. Follow the link to claim, and make sure you have your original receipt.

www.cambridgeaudio.com/freechromecast



Diamond by design

B&W is so proud of the build quality of its 800 Diamond series speakers that it's created this three-minute time lapse vid to emphasise the complexities of the construction process.

If you've ever wondered how a high-end speaker is put together, then check this out.

Youtu.be/5vRMOSbus5w



VHS on a 4K TV

YouTube user NEScRetro has answered the question you probably never wanted to ask: what does a VHS tape look like when played back on a state-of-the-art Ultra HD TV? The answer, not surprisingly, is not that good – 'the lines aren't very sharp, for want of a better word,' is his verdict...

Youtu.be/JQUHkEv-NOK

Another Aego trip

Acoustic Energy Aego
→ www.acoustic-energy.co.uk



With its third generation of Aego compact loudspeakers, Acoustic Energy is the latest audio brand to offer assistance to those unimpressed with the sound performance of their slinky new telly. The updated range consists of the Aego Sound3ar (£200) and the Aego³ stereo satellite pair (£200), both of which ship with a separate subwoofer that acts as the system hub, housing digital and analogue audio connections (plus aptX Bluetooth) and amplification. Available to buy now.

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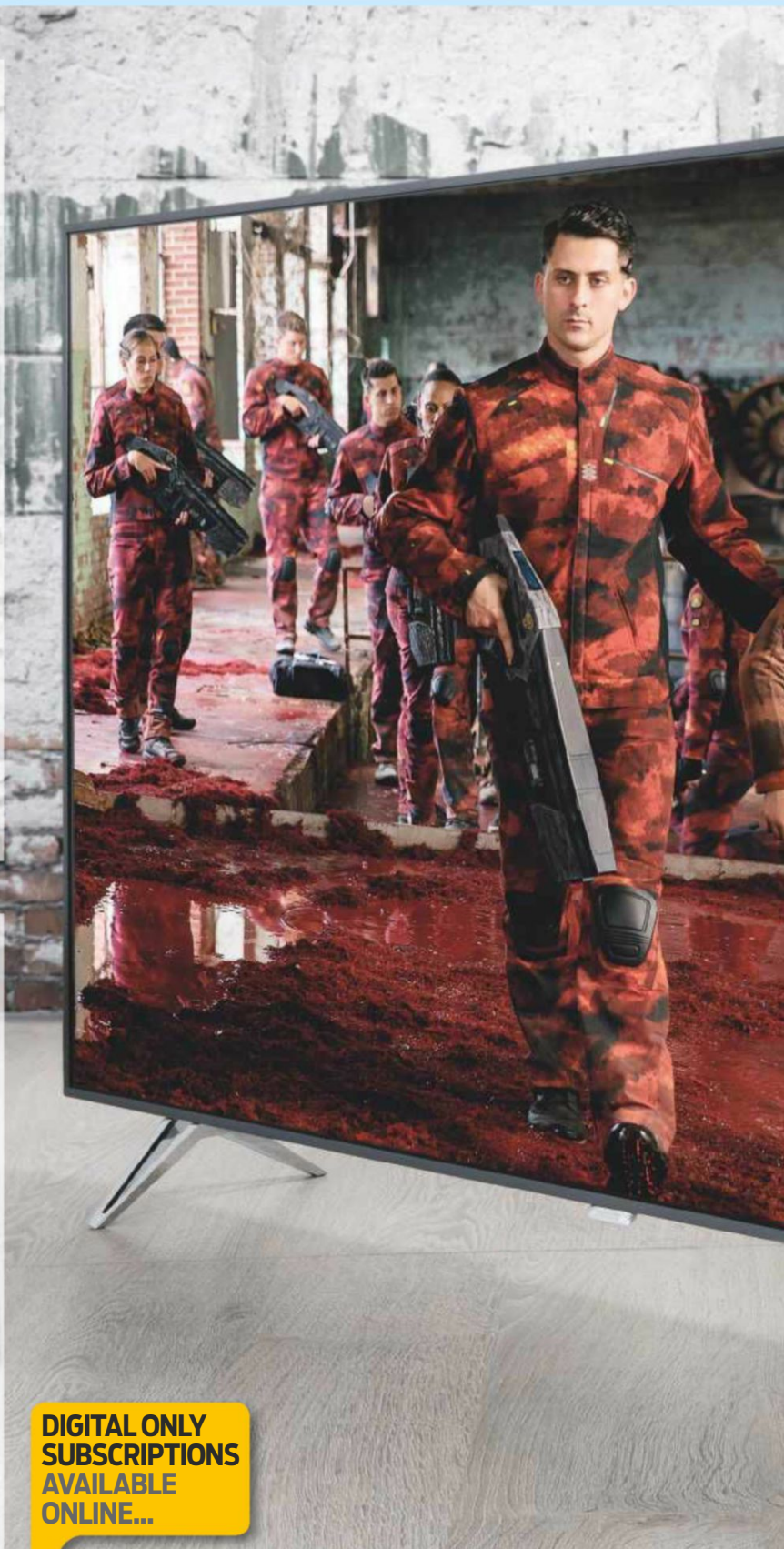


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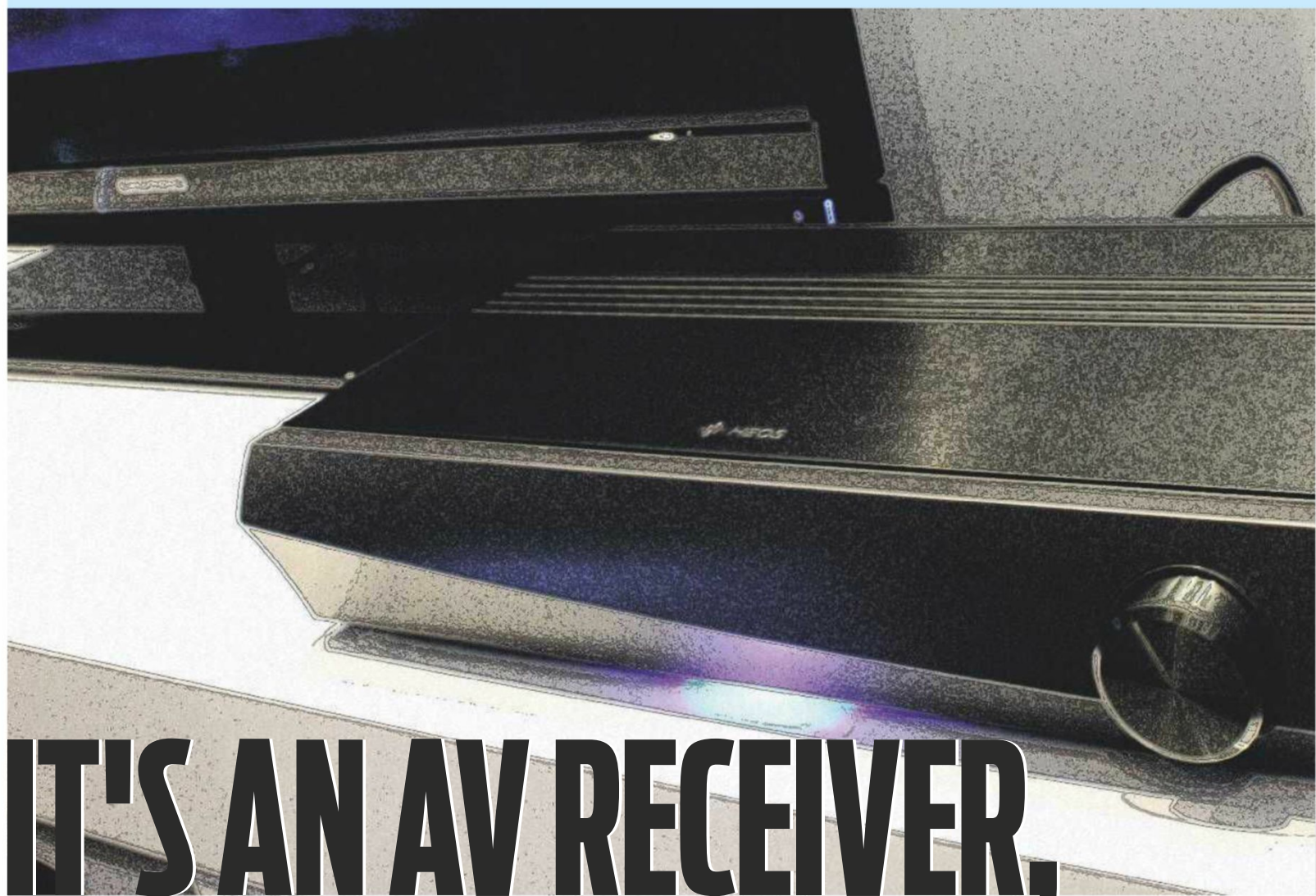
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IT'S AN AV RECEIVER, *but not as we know it...*

Denon and Marantz unveil radical new home cinema and multiroom hardware at their annual trade preview.

Steve May reports from the show floor

DENON WANTS TO reinvent the home cinema AV receiver.

It's an ambition that is particularly well timed. Talk to any industry insider and they'll tell you fewer people than ever are buying old-school AVRs. Not because they've necessarily fallen out of love with multichannel surround sound (that would, after all, be madness), but because the sheer size and legacy ballast of the average home cinema amp seems somewhat... unnecessary.

So there's been a rethink. Out goes the intimidating burly fascia that has epitomised the traditional home cinema receiver for decades, and in comes a product altogether more oblique and contemporary. Denon calls it a HEOS AVR,

the first AV receiver to be formerly inducted as part of Denon's wireless multiroom audio ecosystem.

This new-look component was the headline grabber at this year's Denon and Marantz dealer conference. The annual confab, which took place in Malta, is a platform for the D+M Group (the parent company of Denon, Marantz and speaker brand Boston Acoustics) to showcase upcoming hardware. It's the first chance to lust over new products and get a sneaky glimpse of what's around the corner.

In many ways, the appearance of a dedicated HEOS AV receiver was a surprise, particularly given that Terrie O'Connell, D+M's President of Sales and Marketing for Europe, announced during her keynote that HEOS, launched squarely as a competitor for Sonos last year, is 'transitioning from a brand to an ingredient.'

Indeed, multiroom wireless HEOS interoperability was announced as a key feature of several new AV receivers to be launched under the Denon and Marantz labels.



Pleased to meet you

The HEOS AVR is due for release in January 2017. Even some of Denon's UK team confided that they were surprised to see a sample, not just posing for pictures, but apparently working flawlessly.

The receiver isn't a poster child for 3D audio. Instead it's a conventional 5.1 design with a twist – it can connect wirelessly to other HEOS speakers and doesn't need loudspeakers to be hardwired. It's imagined most users, though, typically will cable the front L/C/R soundstage but use wireless links to powered rear enclosures.

Of course, what's immediately noticeable is that it's slimmer than the norm, with a sculpted fascia and no status display window. The receiver will come with a simplified remote control, shifting much of its functionality to a smart device app.

Beneath the lid it's (probably) equally part Marantz slimline NR-grade electronics and part HEOS Link. As a member of the HEOS multiroom system, any content played into a HEOS speaker can be delivered by the new AVR. It can also be grouped with other HEOS speakers for multiroom playback. Alternatively it can be treated just like a regular home cinema separate.

Obviously, this hand-built sample should be taken with a pinch of salt. I'll be surprised if the production model exhibits the same high level of cabinet design and finish – this preview unit looked extremely premium. The model currently features three HDMI inputs, with one output, along with digital inputs and phono audio. It's expected to sell for around £1,000, but that could obviously change before the first unit ships.

If you can't wait, HEOS functionality will debut on a smattering of new, more traditional receivers later this year. The first HEOS-enabled AVRs wearing a Denon badge will be the nine-channel AVR-X4300H (expected to sell for £1,200) and the 11-channel AVR-X6300H (£1,900).

Both are due in October, and the latter model should have hardcore home cinema fans slaving, as it's hard to imagine that any other home cinema receiver announced this year will promise more bang for the buck. The 11 x 200W amplifier stage makes it a natural partner for a full-fat Dolby Atmos system, negating the need for an extra power amp to run those tricky 10th and 11th channels. The feature set is completed by DTS:X/Auro-3D audio compatibility (the latter as a paid upgrade – D+M Group is currently the only AV receiver maker to offer products compatible with all three immersive audio formats), plus Audyssey MultEQ XT32 room EQ, triple HDMI outputs, and dual-band Wi-Fi and Bluetooth connectivity. It's clearly the high-end model to watch out for.

Marantz components will also have HEOS integrated, starting on the nine-channel SR7011 (£1,400, set to launch in September) and AV7703 preamp (£1,700, due November).

All incoming receivers/processors from either brand are HDMI 2.0a and HDCP 2.2 compatible.

While wireless multiroom will debut at the higher end, the company says it plans to fast-track the technology into the lower ranks. 'We'll be doing



Top/second from top: A pre-production sample of the HEOS AVR showcased a striking chassis and a stripped-back connections panel

Second from bottom: D+M Group's Terrie O'Connell outlining the company's 2015 performance. The HEOS line accounted for 9 per cent of global turnover

Bottom: The pan-European trade preview was held in Malta. Sun, sea and circuit boards, perhaps?

HEOS vs the world...

Denon's multiroom rivals
Sonos

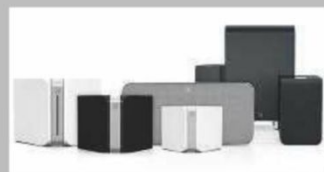


The undisputed king of multiroom, Sonos offers three standalone speakers, plus a subwoofer, soundbar and system integration components. Über-cool device/desktop app, and 5.1 system possibility, but no hi-res support yet.

Yamaha MusicCast

Yamaha has assembled a multiroom ecosystem that combines speakers, soundbars and a wide range of AV receivers. Bluetooth compatibility means non-MusicCast speakers can join the party. Supported sources include 24-bit/192kHz FLAC, WAV and AIFF.

Bluesound



Positioned as a multiroom solution for audiophiles via its hi-res support (including the MQA format), Bluesound's premium-priced product line features the CD-ripping 2TB Vault, standalone Pulse speakers and Node pre-amp/amps.

Denon's HEOS range now includes a soundbar



it as quickly as possible,' O'Connell told *HCC*. 'Obviously it's down to capacity.' The company also intends to debut HEOS on its Denon CEOL line of systems.

Intriguingly, O'Connell hinted at HEOS Lite, a lower specification version which could bring more entry-level products into the mix.

HEOS is very much being seen as a cross-brand feature. O'Connell is candid about this commonality. 'Anyone that knows anything about manufacturing will know that we have one platform when we make an AV receiver. So we have HEOS in both Denon and Marantz, whether we want to market it or not.'

It seems the conundrum of just how widely to integrate HEOS into Denon and Marantz has been a big debate behind closed doors. 'We've thought long and hard about how we actually capitalise on that,' confides O'Connell.

When it comes to trends, the connected audio market is on a roll – Bluetooth and network speakers are going gang-busters.

Currently D+M paints an audiophile grey line between Denon and Marantz, but it appears the latter is going to get its own branded wireless music system. 'We need our core products to have connectivity,' concedes O'Connell. 'So we will launch a Marantz wireless music system in the future.'

She also believes the death of the CD has been exaggerated: 'We thought CDs would be going down as a category much more rapidly, but it seems people don't want to give up their collection.'

Counting the cost

While the advent of new tech will excite all, it comes with a caveat. The event took place pre-Brexit, but already the group was signposting price rises. 'Yes,

prices will rise, we expect. We cost products out on the American dollar so unfavourable currency fluctuations will make things difficult for us in the UK,' *HCC* was warned.

But what of the other big high-performance AV story – hi-res audio? Denon boffins have a history of being first out of the gate with codec support, yet it's not announced any compatibility plans for MQA, the studio master quality format. Takamitsu Hashimoto, Global Team Leader for Hi-Fi Systems, revealed that discussions are ongoing. 'Yes, we are discussing with the MQA team. Hi-res audio is becoming popular globally. We think high-resolution streaming will be the next big trend.'

Hashimoto-san also says the group wants to maintain an agnostic approach to codec support. 'We want to cover everything. But you have to think about how each format is going to be used. MQA is a good fit for a streaming service, whereas DSD 11.2MHz is hard to stream – so in that case we support it with a USB connection.'

While HEOS launched without support for hi-res content, Denon is looking to rectify that with its new HS2 line, which comprises hi-res iterations of the main HEOS speaker family, all now able to support music files up to 24-bit/192kHz. DSD and AIFF upgrades are also promised.

'Over the next year we will be accelerating updates for new formats for compatibility,' promises Hashimoto-san.

Early adopters do, however, face being left out. 'Basically you will need new-generation HEOS hardware as these new codecs require a more powerful DSP,' he admits. 'We will upgrade as much as possible. But from a certain time, we also have to change the hardware.' ■

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Each year the CEDIA Awards showcases the best home cinemas, media rooms and more from custom installers in the UK and beyond. Here, **Team HCC** highlights the category winners, highly-commended entries and other finalists that caught our attention, from high-end theatres to snug setups. If you're looking for inspiration for your own home cinema install – or just want to drool – this is the place to start.



◀ Best Home Cinema £40,000- £100,000

Winner: **Sphere Custom**
Designed for 'a passionate lover of architecture,' this startling ten-seat cinema room by South Africa's Sphere Custom certainly fulfils the brief to make it stand out from the norm, with 3D geometric panels both giving it

a contemporary feel and aiding acoustic treatment.

Enveloping the three tiers of seating is a 15-channel speaker array that includes a pair of in-ceiling speakers to work as the 'Voice of God' for the Auro-3D format. Enclosures are from Artcoustic and Definitive Technology. Racked hardware includes a Datasat RS20i processor, Integra amps, Denon BD spinner, Drobo NAS and a custom-built PC running Kodi for media playback.

www.spherecustom.com

▼ Best Home Cinema Over £100,000

Winner: **Cyberhomes**

Recently featured in *HCC*, this vintage-styled picture palace – the work of UK outfit Cyberhomes – hides state-of-the-art hardware, acoustic treatments and automated control beneath its retro facade.

For movie-viewing, a 130in Screen Innovations screen and Sony 4K projector deliver premium pictures, fed by sources including a Kaleidescape Strato 4K server. Motorised masking and an anamorphic lens cater for different aspect ratios, while sliding red curtains add a touch of real cinema flair. Sonics come from a 7.2.4 Dolby Atmos speaker array, with all speakers hidden from view.

www.cyberhomes.co.uk





▲ Best Media Room Under £15,000

Winner: **Sound Sense**

This category-winning project saw a bright, open-plan family room transformed into an entertainment hub with three distinct areas – a projector-based setup, a bar area with flatscreen TV and outdoor pool space. The installers faced two challenges – sticking to a budget of £7,000, and working around

the room's floor-to-ceiling glass walls. The latter were lined with heavy drapes for light control and sound improvement, while a high-brightness Panasonic projector was chosen to work well during daytime viewing sessions. In-ceiling speakers, sympathetic lighting and hardware stacked neatly in a full-width AV cabinet complete a tidy, affordable media room makeover.

www.soundsense.co.in



► Best Media Room Under £15,000

Finalist: **Grahams**

Another affordable media room, this time on a slightly smaller scale. Designed by London tech specialist Grahams, it's a great example of a home cinema bolthole intended for immersive movies, TV and gaming in cosy comfort. Taking centre stage is a 75in Samsung Ultra HD flatscreen. But where are the front three speakers of the Arcam AVR450-powered surround sound system? The trio, from Triad's Mini range, are tucked away in a purpose-built bulkhead at the top of the main wall, angled down to target the listening position. It's a clever, discreet solution.

Lighting touches include low-level LEDs to guide visitors to their seats, while driving the setup is made easy by a Control4 system. A PS3, Amazon Fire TV and Apple TV provide plenty of content options.

www.grahams.co.uk



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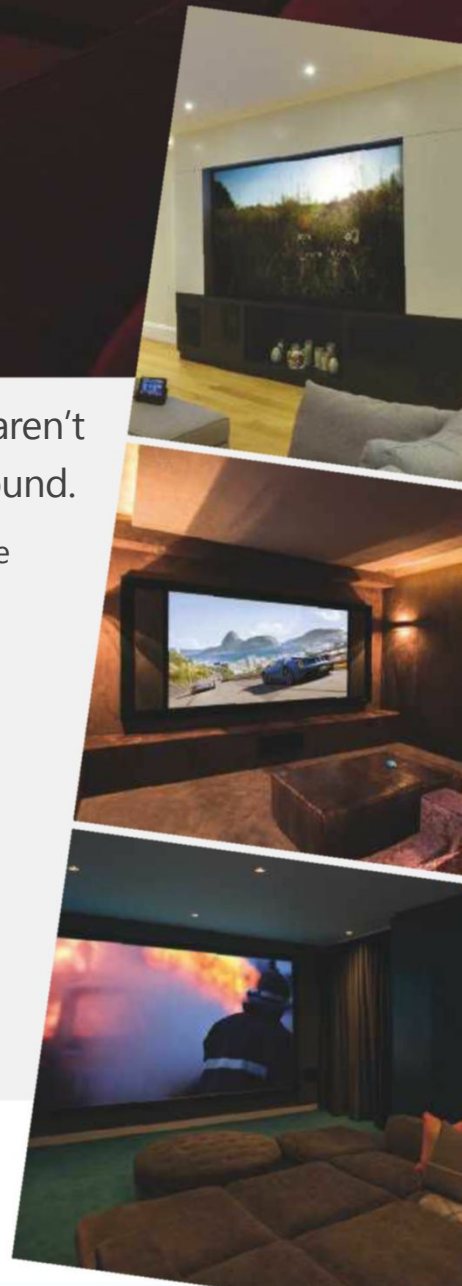


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Best Home Cinema Over £100,000

Finalist: **Synergy Technologies**

Another pricey movie room with a vintage look, this time styled to evoke a 1920s cinema. Cue retro lighting, a scarlet colour scheme and plenty of opulence.

Of course, a big space like this demands a big audio-visual experience. Achieving this is a 33-speaker sound

system (with hidden height channels), Sony's top-of-the-range VPL-VW5000ES Ultra HD laser projector (yours for a cool £50,000) and a 202in curved screen. A remote monitoring system analyses speaker performance (including operating temperature), which the owner can keep a track of using either their iPad, iPhone or iWatch. It's iOpening...

www.synergyav.com

▼ Best Home Cinema Over £100,000

Finalist: **Seven Integration**

The owner of this chic cinema (previously featured in HCC #254) approached the UK's Seven Integration with a simple brief: a room that could be enjoyed by the whole family but kept equipment hidden from sight. At that stage 3D audio wasn't on the agenda... until a demonstration led to a change of mind. The result is that the room features an 18-speaker, twin-subwoofer system ready for Dolby Atmos, DTS:X and Auro-3D, courtesy of Datasat processing and amplification.

Seating, spread over two levels, comes from US brand Fortress, and includes heat and massage functions, plus D-Box integration for an extra level of cinematic excitement. Content comes from a monster Kaleidescape setup that features an 8 x 4TB server!

www.sevenintegration.co.uk



▲ Best Home Cinema Over £100,000

Finalist: **Trescent Lifestyles**

This high-end install required a little dose of co-operation between installer Trescent Lifestyles and screen manufacturer Stewart Filmscreen – the cinema screen, which takes up practically the entirety of the front wall, is a whopping 216in design, bigger than anything the company had ever built.

So the owner has a one-of-a-kind canvas for his bigscreen images, and the PJ itself is pretty specialist – an NEC DCI (Digital Cinema Initiatives) laser model that brings commercial-grade picture quality to this domestic setup. Continuing the premium theme is the speaker array, which uses Steinway Lyngdorf enclosures mounted in wall, plus no fewer than eight of the brand's 12in boundary subwoofers. All hardware is meshed with a Crestron processor running a custom UI.

www.trescent.com





Best Home Cinema under £40,000

Winner: **M.E.G.A. AV Installations**

This basement-based cinema room, part of a whole-house conversion of a listed building, throws Blu-rays onto a 110in screen and uses KEF THX-certified in-wall speakers to rustle up a 5.2-channel soundfield. There's plenty of sonic attention here, too, including the decor-blending on-wall absorption panels and the enclosure of the projector in a bespoke cupboard to limit fan noise. We particularly like the flush-to-wall screen installation and LED-lit coffered ceiling, not to mention the window that provides a neat view from the adjacent office space.

www.megaavinstallations.com



▼ Best Media Room Over £15,000

Winner: **TwentyTwo Integration**

Twin-screen setups are ideal for when a cinema will also be used as an everyday TV room, and in this category-winner installer TwentyTwo Integration used both a 55in Samsung JU7000 4K TV (mounted on a pull-out bracket) and a JVC DLA-X500 projector – a drop-down screen is fitted in the ceiling pelmet ready for action.

For audio, there's a 5.1 speaker array using in-wall and in-ceiling models from Monitor Audio and a Velodyne Impact Mini subwoofer tucked out of sight in a joinery unit. A Yamaha RX-A740 AVR drives the speakers and marshals sources including a Samsung Blu-ray deck, Sky+HD box and Apple TV. 'A well thought out media room, achieved on a tight budget,' is the CEDIA judges' verdict.

www.twentytwointegration.com

▲ Best Media Room Over £15,000

Finalist: **Finite Solutions**

Nicknamed 'Pretty in Pink', this room is designed to function both as a daytime retreat and to work as a blacked-out movie den. Hardware includes a Sony 4K projector, Oppo Blu-ray deck and a Kaleidescape media server that delivers Hollywood blockbusters at 4K resolution. The screen is from Screen Research, using fabric optimised for Ultra HD content.

With the room located directly below bedrooms in the property, sound insulation of the hidden speaker system was a key part of the project – Finite Solutions installed acoustic wall panels and doors, heavy drapes to windows, and treated the ceiling.

While the colour scheme will probably split opinion with HCC readers, there's no denying those chaise longues look comfy...

www.finitesolutions.co.uk





▲ Best Home Cinema £40,000-£100,000

Finalist: **Finite Solutions**

Another entry for Leeds/London's Finite Solutions, and a somewhat unusual project in that this basement room had already been established as a home cinema five years previously, but a new owner decided it could be better. After initial consultation and 3D renders, the room was eventually stripped to a bare shell and a complete revamp undertaken to create, says the installer, 'a very different sonic and visual experience, while also significantly improving the look and feel of the space.' This new design incorporates native 4K projection, 7.1 audio delivered by a Yamaha RX-A3040 receiver and Totem Acoustics speakers, absorption and diffusion treatments, mocha leather Fortress seating and RTI-based system control.

www.finitesolutions.co.uk



▲ Best Home Cinema £40,000-£100,000

Finalist: **Cinema Architects**

The initial aesthetic demanded by the owner of this bigscreen den employed real-wood panelling – a proposal tweaked to make sure the room could house the acoustic materials required to get the Genelec active speaker array working to its best potential. Panelling was rejected in favour of wooden slats, which allowed for space in-between for sonic treatments. The view from the double-tier seating is of a 16:9 ratio Harkness screen, used with a DreamVision Ultra HD PJ (based on the same LCoS optics as JVC's popular DLA range). Images come from a Panasonic 4K BD deck. The owner must love bass – the room using four 10in subs plus a 4 x 12in model lurking up front.

www.cinema-architects.co.za



Best Home Cinema £40,000-£100,000

Finalist: **Macbee**

Macbee, based in India, were 2015 winners in the Best Home Cinema Over £100,000 category. Here they showcase their ability to craft a largescale theatre – with seating for 18 arranged over three rows – on a somewhat reduced budget.

Much of the outlay will have been spent on this plush cinema's audio hardware. A Trinnov Altitude32 processor (with Dolby Atmos, DTS:X and Auro-3D support) optimises movie soundtracks to a potent JBL Synthesis speaker setup employing six subwoofers, with wiring run for 10 ceiling speakers to be installed at a future date.

www.macbee.in



▼ Best Yacht Installation

Winner: **Archimedia**

It seems that super-yacht owners aren't content to take to the open seas with just a paperback for company – this award-winning fit-out of Gulf Craft's Majesty 155 offers all manner of AV refinements, from marine-grade outdoor speakers and in-ceiling subwoofers to mirror TVs in all cabins hooked up to Kaleidescape, satellite and Apple TV source gear. Easy-to-use iPads are employed for the control interface, and the yacht's navigation system can be called up on the various TVs so you can make sure you're not about to hit an iceberg during a midnight screening of *Titanic*.

www.archimedia-me.com



▼ Best Showroom

Winner: **Intuitive Homes**

The Manchester-based install company gives potential customers a taste of its talents with a two-storey demo space. As well as a smart kitchen and office, it houses a media room designed to show the best in both TV and projection, and automated technology. So while an 85in Panasonic 4K screen works with discreetly-installed Amina and Bowers & Wilkins speakers, a single button press on the system controller brings a tab-tensioned screen down from the ceiling in front of the Panasonic display. Curtains automatically close, depending on the time of day.

www.intuitivehomes.co.uk



▼ Best Dressed Rack

Winner: **SONA**

CEDIA's Best Dressed Rack accolade can serve as good inspiration for any AV-holic current dealing with a cupboard full of cable spaghetti, although it's safe to say most of us don't require a solution this elaborate. Winning company SONA was tasked with housing 50RUs of equipment for a high-end smart home, and

establishing the necessary cable and heat management. The system utilises fitted cupboards in an upstairs room, both accessible from the front and from the store room behind. Racked hardware includes four Sky boxes, plus 12(!) Sonos Connects and a trio of Architect Zone amplifiers for multiroom audio.

www.thinksona.com



And the rest

More winners from the 2016 CEDIA Awards

Best Lighting Scheme

Winner: **De Opera Domotica**



Best Yacht Installation

Highly Commended: **Bureau of Systems Integration Ltd**

Best Custom Solution

Winner: **Intuitive Homes**

Highly Commended: **MESL**

Best Multiple Scheme for a Property Developer

Winner: **Perfect Integration Ltd**

Highly Commended: **Konnectiv Technology**

Best Integrated Home Under £100,000

Winner: **Inspired Dwellings Ltd**

Best Integrated Home £100,000-£250,000

Winner: **Archimedia**

Highly Commended: **3Logic | Art Cinema**

Best Integrated Home Over £250,000



Winner: **Sagar Smart Homes**

Highly Commended: **SMC**

Best Innovative Product

Winner: **Invision UK – Origin Acoustics Director Speakers**

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Winner: **Invision UK**

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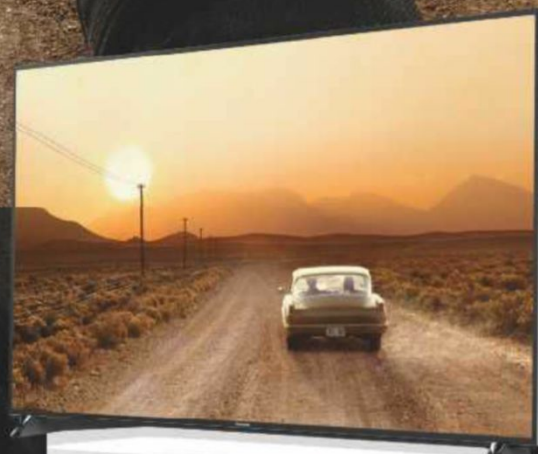
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REVIEWS

→ **HARDWARE** PHILIPS 65in PUS7601 Ultra HD/HDR TV SONY Full HD projector with sub-£2,000 asking price LUMAGEN High-end 4K scaler/processor DENON Affordable seven-channel AV receiver ROKU Media player/smart TV box SAMSUNG Dolby Atmos soundbar OCULUS Rift virtual reality headset PANASONIC Designer 4K flatscreen & MORE!



**Towers
of power?**

Dynaudio's new Emit speakers mark the entry-point into its audiophile world. Does a cut-down price equal a cut-down performance? See p42

HCC RATINGS KEY...

| | |
|---------------|-------|
| Outstanding | ★★★★★ |
| Above average | ★★★★☆ |
| Acceptable | ★★★☆☆ |
| Disappointing | ★★☆☆☆ |
| Dire | ★☆☆☆☆ |

All prices quoted are approximate and may have changed

AV INFO

PRODUCT:

65in 4K LED TV with direct lighting and aggressive price tag

POSITION:

A step below Philips' top-tier AmbiLux TV

PEERS:

Samsung 65KS9500; Panasonic 65DX902

Philips makes direct LED lighting and 4K HDR playback affordable. **John Archer** looks for the catch

HDR for the masses?

The more high dynamic range (HDR) displays I've seen, the more convinced I've become that the only type of LCD TV that can comfortably handle HDR's extreme light demands are those that use direct rather than edge lighting – ideally in conjunction with some degree of 'local dimming', whereby clusters of LEDs have their light output adjusted independently.

Unfortunately there's a problem with the direct LED lighting/local dimming HDR combo: it's expensive to produce. Or, at least, I thought it was until the Philips 65PUS7601 showed up.

This new 65in flatscreen boasts plenty of good stuff – HDR playback, native UHD resolution, direct LED lighting with local dimming across an impressively high number (128) of zones – for a £2,000 price that undercuts rival, similarly specified TVs. The Panasonic TX-65DX902, for instance, costs nearly £3,000, while Samsung's UE65KS9500 will set you back no less than £3,800.

There are compromises associated with the 65PUS7601's price, however. Most notably, it only delivers a claimed peak 700 nits of brightness versus the 1,000 nits demanded by the industry's Ultra HD Premium recommendations. Furthermore, Philips' panel can only reach 76 per cent of the DCI-P3 colour space. UHD Premium specifications mandate 90 per cent.

I've long suspected, though, that a TV could potentially deliver a sort of 'HDR Light' experience that still looked enticing for a fraction of the price being asked for the full Ultra HD Premium monty. And I'm happy to report that the 65PUS7601 proves my suspicions right.

Giving it a leg up

The set impresses right out of the box thanks to a striking design. Its large display sits on a pair of low-profile – but still stable – silver legs, while its daintily trim metallic frame belies the actually pretty hefty build quality.

This being a high-end Philips model, the aesthetic impact enters a new, eye-opening dimension when you turn the TV on and experience the Ambilight effect erupting from three of its sides. With its mission to track image content in terms of the intensity, colour tone and colour location of the light 'aura' around the TV, Ambilight sounds gimmicky. But it's a feature that's

both fun and can add to your involvement in what you're watching. You might find it suits some content better than others, though.

Of the 65PUS7601's four HDMI inputs, two are equipped with 4K/HDR support, which is probably enough for most setups. These are joined by three USBs and the now *de rigueur* wireless/wired network options.

Handling the smart side of things is Philips' iteration of Android TV. As I've noted in previous issues of *HCC*, this runs more stably and speedily than the version found on Sony's Android models. Also, as previously noted, I'm not its biggest fan. While the UI is pretty enough, it's quite a rigid experience, and seemingly overloaded with apps.

The 65PUS7601's images are driven by powerful processing. It gets the top-line Perfect Pixel Ultra HD system, which, from experience, delivers significant improvements over the step-down Pixel Precise Ultra HD engine.

Careful setup is required with some aspects of the screen's processing, though. Particularly key is 'Perfect Contrast'. If you want the TV to default to the industry HDR EOTF standards, you need to turn this feature off to reduce brightness but ensure clipping (detail loss) doesn't set in. Turn the Perfect Contrast feature on and pictures will enjoy more light but may start to blow out in bright areas.

Philips argues that setting Perfect Contrast on should give the best results, given that most real-world HDR content is mastered at 1,000 nits rather than 4,000 nits, so there's less potential picture info to be lost, but I'd suggest experimenting with each setting until you find the one you like best.

Other user options include various levels for Perfect Natural Motion and Clear Motion, MPEG noise reduction, and Ultra Resolution. These should all be approached with a degree of caution, as they do more harm than good to your beloved content on their highest levels.

1. As with Philips' other high-end TVs, you get a dual-sided QWERTY remote

2. The TV employs direct rather than edge LED lighting





**MAKING
A PLEDGE**
Divergent sequel
Allegiant marks
the beginning of
the end... p97

Engaging and immersive

Once I'd tweaked the 65PUS7601's settings, it delivered exactly what I'd hoped for: a slightly tamed but still engaging and immersive HDR experience.

When it comes to HDR's luminance, the set manages a surprisingly good sense of it for a 700-nit peak LCD panel. It adopts a slightly darker baseline brightness value for HDR than it uses for SDR content. This gives it more 'space' to deliver a sense of HDR's brightness peaks. Crucially, though, this reduction in baseline brightness doesn't go so far that it leads to the silhouetting problems and light/dark imbalances I've seen on other sub-1,000 nit HDR displays.

And thanks to Philips' assured direct backlight handling, HDR images suffer little with clouding issues – and less so than with much more expensive and brighter HDR TVs available. With the Perfect Contrast feature

'4K HDR sources don't appear as explosive or colour-rich as elsewhere, but remain highly watchable'

deactivated I saw hardly any light 'halos' at all, even around the candles and flickering torches that make Chapter 7 of the *Exodus: Gods & Kings* Ultra HD Blu-ray such a hard test for HDR displays. Put this direct-lit TV head-to-head with an edge LED competitor and you'll likely notice the difference.

Setting Perfect Contrast to Minimum introduced only the faintest hint of clouding during the *Exodus* sequence, alongside a palpable uplift in the overall sense of dynamism. The black levels on show remained outstandingly deep and rich for an LCD TV, a benefit of Philips in this instance using a VA panel in favour of an IPS design (confusingly, the step-down 7101 models use IPS panels for the 49in and 55in size, but VA at 65in).

I wouldn't push the Perfect Contrast feature any higher than its minimum setting. Clouding then becomes a distraction at the expense of only slightly extra brightness. But the bottom line is that here's a screen with HDR impact that doesn't force you to tolerate significant clouding problems. And that's enough in itself in the context of 2016's TVs to make the 65PUS7601 a serious hit for its money.

The TV isn't quite as successful with the wide colour gamuts associated with most HDR sources, however. Despite Philips having colour enhancement processing at its disposal, the 65PUS7601 doesn't have the native colour gamut to deliver the same ultra-rich saturations and finely nuanced tones witnessed on the very best 2016 displays. I also spotted traces of colour striping from time to time.

That said, with the exception of one or two low-lit skin tones, colours seldom look at all unnatural, and no tones appear to stand out starkly against the rest, leading to an often beautifully balanced and nuanced image.

And there's enough colour finesse, combined with the impressive light management, to let you soak up the beauty of the screen's 3,840 x 2,160 resolution. Premium UHD footage, such as the deer hunting scenes at the start of *The Revenant*, exhibit excellent clarity and detail. Motion blur and judder does, slightly, dampen the effect, and it's here that I'd recommend using the lowest setting of Philips' Perfect Natural Motion tool.



3

So, while this screen's handling of HDR 4K sources isn't as explosive or colour-infused accurate as the images witnessed on other challengers, it's very watchable, and I appreciated having less picture distractions – especially backlight-related – to detract during movie night.

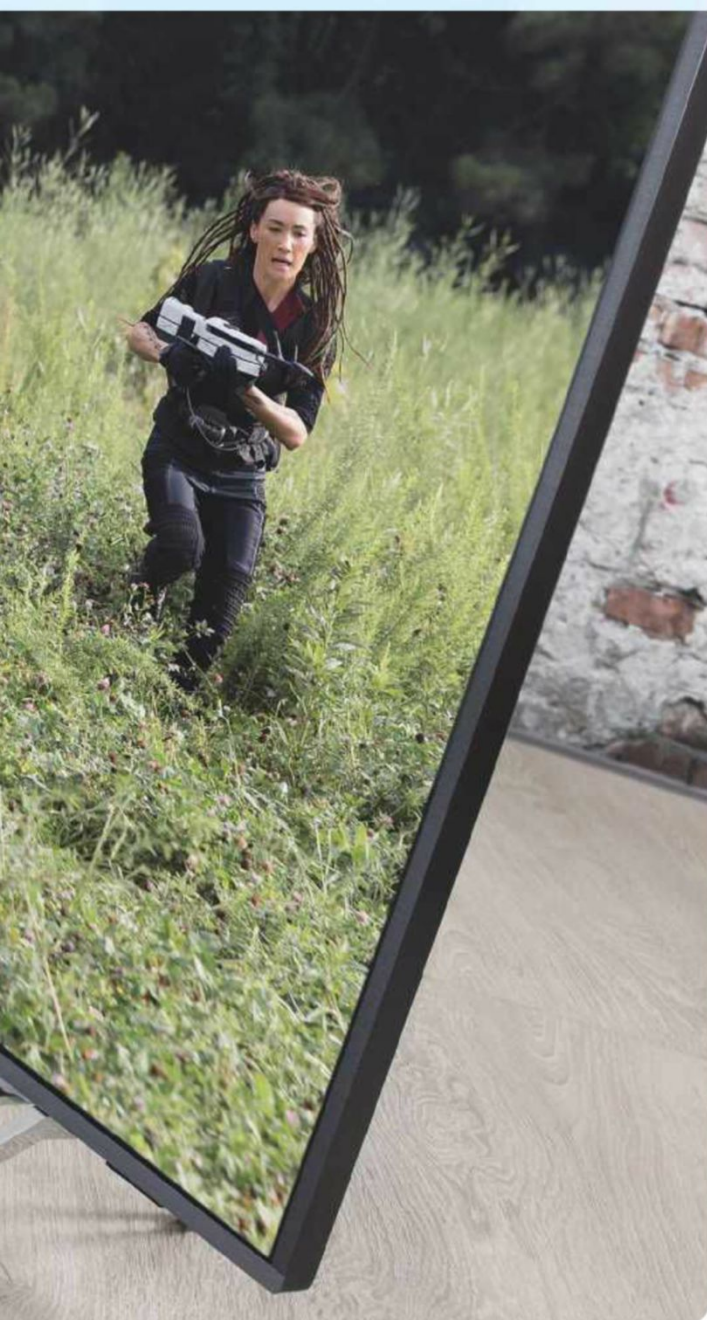
4

Away from 4K

Of course, not everything we watch is in 4K or HDR. So it's good to find that the 65PUS7601 also cuts the mustard with ordinary HD, non-HDR Blu-rays and HD TV broadcasts.

When tasked with upscaling HD content to its native 4K resolution, it does a respectable job, adding detail and definition. Source noise doesn't appear greatly exaggerated, although I found material with a lot of image grain benefitted from the TV's onboard noise reduction system (on its lowest setting). Colours retain their integrity on their journey through the upscaling software, too.

Much less convincing is Philips' HDR Upscaling tool. This is designed to introduce a flavour of HDR to SDR sources, not an approach undertaken by all rival brands. On the upside it doesn't try too hard, only adding a

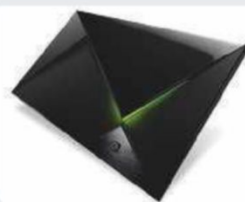


SPECIFICATIONS

3D: No. **4K:** Yes. 3,840 x 2,160 resolution **HDR:** Yes. HDR 10 **TUNER:** Yes. Freeview HD **CONNECTIONS:** 4 x HDMI inputs; 3 x USBs; optical digital audio output; headphone jack; Scart; CI slot; Ethernet **SOUND:** 30W **BRIGHTNESS (CLAIMED):** 700 nits peak **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,449(w) x 835(h) x 67(d)mm **WEIGHT (OFF STAND):** 26.3kg

FEATURES: Three-sided Ambilight; Perfect Pixel Ultra HD processing engine; HDR Upscaling system; built-in Wi-Fi; USB multimedia playback; DLNA multimedia playback; Android TV smart engine; direct LED lighting; local dimming over 128 zones; Perfect Natural Motion; Ultra Resolution

PARTNER WITH



NVIDIA SHIELD: Step up a notch from the Philips TV's own Android platform with this high-powered Android media player/console. The user experience is super-slick, it's 4K compatible and it looks like something from a sci-fi film. Available for £150.

moderate expansion of brightness and colour. There are times when it really does work well. However, colours after HDR Upscaling are a bit hit and miss. Subtle greens, warm oranges, reds and low-lit skin tones tend to appear a little off, and there's a slightly yellow undertone that's hard to shift. On balance, I'd suggest taking a purist's view and leaving HDR Upscaling out of the equation.

With no 3D playback to detain us (like Samsung, Philips has abandoned the third dimension this year), I can move straight on to how the 65PUS7601 sounds. Pushed hard with a couple of jumbo-sized fight scenes in *Pacific Rim*, it does fairly well. I could reach a decent volume without crackling speakers or distorted audio; dialogue stands proud of the mix (though deep male voices can sound a bit 'hummy'); and the woofer on the TV's rear proves capable of introducing a respectable level of bass. The only significant issue is that trebles can over-dominate.

The 65PUS7601 is a very handy gaming monitor, too. When using the Game setting, and turning off a few extra video processing systems, I measured the time it takes to render images at only around 30ms – a low enough result to have minimal impact on gaming performance.

Bigscreen bargain

This is undoubtedly one of the best-performing flatscreens I've seen from Philips for a long time. Some video purists may take against it, I guess, because it doesn't play the HDR 'numbers game' and cannot claim to be a true wide colour gamut display. It also needs care with setup to drag the best out of it. Yet provided you put the initial legwork in, the simple reality of watching movies on this 65-incher is that they are big, balanced and immersive – with HDR and SDR sources alike. That £2,000 price therefore looks like something of a steal ■

3. The minimalist design includes a thin, dark bezel and slender, wide-mounted feet

4. Only two of the Philips' four HDMI inputs are HDCP 2.2-enabled

HCC VERDICT



Philips 65PUS7601

→ £2,000 → www.philips.co.uk

WE SAY: While it might not hit the specification numbers expected of high-end HDR TVs, the 65PUS7601's immersive and natural pictures prove surprisingly irresistible.



Dynaudio has lowered its sights with its Emit speaker range. **Danny Phillips** gives it a 5.1 workout

Down but not so dirty

Dynaudio is a speaker brand doing most of its business at the high-end. The company has been consistently pushing the audio envelope since the late 1970s with pioneering speakers like the Consequence, Evidence and Contour. Its speakers are innovative, distinctive and accomplished. One thing they're usually not, however, is affordable.

This is something that Dynaudio is addressing, sort of. Not with a soundbar or sub/sat system, but with a new entry-level range, called Emit.

Admittedly, at a chunk over £3,000, this 5.1 package is not everyone's idea of affordable, but given that a single pair of Dynaudio's Evidence Platinum floorstanders costs around £58,000, it could be seen as a bargain, relatively speaking. And what you're getting with the Emit models are speakers that bring Dynaudio's technical innovation and Danish craftsmanship to a much more realistic price point, but with a promise of performance that exceeds rival systems in its class. Sounds tempting.

Sizing up the system

The 5.1 setup on test here includes a pair of the Emit M30 medium-sized floorstanders (£1,250), the M15C centre (£425) and a pair of M10 bookshelf speakers (£500). The range also includes a larger bookshelf option, the £600 M20, in case you're seeking a little more authority in the surround field.

There's no dedicated subwoofer for the Emit line, but Dynaudio recommends the SUB 600. This normally retails for £1,400 but costs £1,000 when bought as part of this 5.1 package. Of course, if you want a speaker upgrade but already have a subwoofer in residence, you could assemble an Emit 5.0 system.

First under the spotlight is the M30, a floorstander – almost one metre high – that comes in a choice of White or Black Satin Lacquer, a step up from the vinyl veneers often used by entry-level loudspeakers. The look is workmanlike, lacking the quirky flourishes of Dynaudio's upper-tier systems as the company constructs down to a price point, but its solid, seamless cabinet and relatively luxurious finish give it the air of a more expensive speaker. It's also quite easy to accommodate, being little more than 20cm wide and not much deeper.

On the front, chamfered edges slope in towards a removable cloth grille; pull it off and you'll expose dual 6.5in magnesium silicate polymer (MSP) mid/woofers – backed by 3in lightweight aluminium voice coils – and a 1.1in soft dome tweeter at the top. The thick industrial surrounds that house the drivers liven things up visually. On the back is a single pair of gold-plated binding posts. There's no bi-wiring option.

The identically styled M15C centre is surprisingly compact, making it easy to house on an AV shelf. It comes with a detachable metal plinth that allows you to angle the speaker upwards or downwards, depending on where it's installed. Its driver array also includes a 1.1in soft dome tweeter but it's flanked by smaller MSP mid/woofers (4.5in) than the M30.

The two-way M10 is an ideal surround speaker, compact enough to perch discreetly on a shelf or sideboard, or on Dynaudio's optional stands. Like the other Emit speakers, build quality is fantastic and the smooth lacquered finish is a treat for the eyes and fingers.

Here, the 1.1in tweeter is joined by a single 5.5in MSP mid/woofer. As with the other speakers in the Emit stable, the M10 features a rear-mounted bass reflex port to help tune its low-frequency output.

Back to bass

Aesthetically the SUB 600 is the black sheep of the family with its incongruous Black Ash wood veneer, although there are six other finishes to choose from – Maple, Cherry, Walnut, Rosewood, Gloss White and Black Piano Lacquer.

The result of a collaboration with Dynaudio's Professional team, this cube-shaped sealed sub is housed in a rock-solid cabinet and does its damage with a 12in front-firing MSP woofer and 300W amplifier.

A busy back panel gives you plenty of control over the sub's performance. There are gain and crossover

AV INFO

PRODUCT:
5.1-channel speaker package

POSITION:
Dynaudio's entry-level speaker range

PEERS:
DALI Opticon 5.1; Monitor Audio Gold 200AV; B&W 683 Theatre

1. Dynaudio MSP mid/bass drivers are used in varying sizes through the range

knobs to twiddle, plus phase can be flipped at the flick of a switch. A high-pass filter switch offers three settings – Flat, 60Hz and 80Hz. There are phono LFE and stereo inputs for feeding signals from an AV receiver and two-channel amplifier respectively. Those who want to beef up bass even further can link multiple SUB 600s using the slave function.

To assess the system's performance I begin with the Blu-ray release of Guillermo del Toro's Gothic chiller *Crimson Peak* and quickly found the Emits serving up a rich and sumptuous soundstage to match the movie's gorgeous visuals. The DTS-HD Master Audio track gives the system a chance to demonstrate its range, combining an exquisite lightness of touch with astonishing power and dynamics.

Set in a spooky, sprawling mansion, the movie is more about brooding atmosphere than slam-bang action, and the Dynaudios crank up the tension with gleeful relish. As damsel-in-distress Edith creeps through haunted corridors, the speakers punctuate the eerie quiet with sonic minutiae. It's a masterclass in detail retrieval.

'Dynaudio's M30s and M15C make a formidable LCR trio, creating a large, three-dimensional wall of sound'

There's so much going on here – the creaking, groaning house, crackling fires, jangling keys, ghostly whispers – yet this system's ridiculously capable tweeters reveal these subtleties in a realistic, tangible manner. The result is a layered, captivating soundstage.

Tonally Dynaudio aims for neutrality, allowing events to unfold naturally and authentically. Such transparency makes it easy to slip into the movie or enjoy long music listening sessions. There's no lack of excitement – the speakers are attacking and expressive, showing great energy when needed – but it feels so effortless, and there isn't a hint of brashness.

Playing fetch with effects

Careful voice-matching and uniform dispersion ensure a cohesive soundstage in which effects move between channels seamlessly. For example, Edith sits in the bath and throws a ball for the dog. As he scampers off to fetch it, his scratchy footsteps move from the front speakers to the rears and back again without even the slightest shift in timbre.

Thanks to their excellent dispersion, the M10 surrounds are easily placed and disguise their position well, adding rear-field colour without sounding overly directional – but give them a location-specific noise and you know exactly where it's coming from.

The ripple of applause after Thomas and Edith finish their waltz has depth, space and clarity; the claps are so lucid and subtly layered that it feels like you're standing in the ballroom.

With a suggested sensitivity of 86dB for all speakers, Dynaudio claims the Emit system is easy for any AV receiver to drive and I certainly found that to be the case (despite the varied impedance rating across the system – four Ohms for the M30s, four-to-six on the M15C and six on the M10). They didn't need much prompting from



my Onkyo TX-NR818 to go sufficiently loud. Nor do you have to go nuts with the volume dial every time – the speakers retain their energy and perkiness at lower volumes, which is great news when watching the news late at night.

The SUB 600 may not be a native member of the Emit family, but it fits right in. It integrates smoothly with the rest of the speakers in the upper bass region, generating huge waves of low frequency noise as the drama builds. Del Toro signposts his jump shocks with deep burbles of bass; the woofer makes them undulate and shudder through your chest. And when those shocks come, the SUB 600 has the slam and muscle to make all that unboxing and lugging it around – it weighs in at around 21kg – seem worthwhile.

Elsewhere, Sharp's clay-mining machine churns with heavy rhythmic beats and the rousing score at the movie's climax is full-bodied. The sub does subtly too – footsteps make a solid clunk and effects have weight without sounding too thick. As with any sub, this is only possible with careful positioning and adjustment, but find that sweet spot and it'll have a transformative effect on your listening experience.

Feasting on Spectre

Moving to something more action-packed, the stunning opening of James Bond caper *Spectre* reveals more of the Emit 5.1 array's wild side. After the kick-drum beats that herald the Day of the Dead celebrations – each one a huge, visceral punch – we step into an explosion of frantic rhythms and immersive crowd chatter. It's beautifully handled by the Dynaudio package, using its wonderful clarity, attack and broad dispersion to bring the carnival atmosphere to life.

Bond's gunshots snap and thud as he dispatches the bad guys through a window; the subsequent explosion has impressive scale. What follows is a pulse-racing chase through the crowd, where the Emit system displays its drive, attack and detail. And as the helicopter whirls above the crowd, we get more of that seamless inter-channel cohesion, the thrum of the engine maintaining its full bodied tone as it pans.

The M30s and M15C make a formidable LCR trio, creating a three-dimensional wall of sound. The M30's terrific bass extension offers weight and solidity, but as effects move across the front the M15C holds its own with the larger speakers. Daniel Craig's voice is smooth as silk; the speaker picks out his gentle husk while a layer of bass lends presence.

With music material this £3,200 system is sparky and precise, with a superb sense of rhythm. The transparency enjoyed with movie playback is even more apparent here, giving an accurate depiction of any song played. It's the sort of performance that buyers will expect from Dynaudio speakers.

Whatever you think of it, Sam Smith's *Spectre* theme is handled with irresistible fluidity and depth, those swelling strings sounding rich and powerful through the Emit drivers. Detail is abundant, from the breathy top edge of Smith's voice to the subtle strokes of harp deep in the mix. It's all there.

Remove the subwoofer from the equation and the M30s also impress in an old-school stereo setup, with the floorstanders' deep bass extension injecting more than enough bottom-end punch. They're rated to reach

SPECIFICATIONS

Emit M30

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 2 x 6.5in magnesium silicate polymer mid/bass drivers **ENCLOSURE:** Bass reflex (rear-ported) **FREQUENCY RESPONSE (CLAIMED):** 40Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 200W **DIMENSIONS:** 204(w) x 960(h) x 275(d)mm **WEIGHT:** 18.0kg

Emit M15C

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 2 x 4.5in magnesium silicate polymer mid/bass drivers **ENCLOSURE:** Bass reflex (rear-ported) **FREQUENCY RESPONSE (CLAIMED):** 60Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 150W **DIMENSIONS:** 500(w) x 130(h) x 210(d)mm **WEIGHT:** 7.0kg

Emit M10

DRIVE UNITS: 1 x 1.1in soft dome tweeter; 1 x 5.5in magnesium silicate polymer mid/bass driver **ENCLOSURE:** Bass reflex (rear-ported) **FREQUENCY RESPONSE (CLAIMED):** 50Hz-23kHz **SENSITIVITY (CLAIMED):** 86dB **POWER HANDLING:** 150W **DIMENSIONS:** 170(w) x 292(h) x 238(d)mm **WEIGHT:** 5.6kg

SUB 600 (subwoofer)

DRIVE UNITS: 1 x front-firing long-throw magnesium silicate polymer 12in woofer **ENCLOSURE:** Sealed **FREQUENCY RESPONSE (CLAIMED):** 22Hz-200Hz **ONBOARD POWER:** 300W **REMOTE CONTROL:** No **DIMENSIONS:** 350(w) x 370(h) x 420(d)mm **WEIGHT:** 21kg **CONNECTIONS:** LFE/slave input; slave out; stereo input and output

PARTNER WITH



MARANTZ SR7010: The SR7010 will touch down soon, but that's no reason to ignore Marantz's still-on-sale nine-channel AVR (£1,000). Performance is smooth, powerful and detailed, and it's ready for Dolby Atmos and DTS:X

all the way down to 40Hz, and certainly deliver a full-range listening experience.

Imaging is superb, too – somehow the trumpet and sax solos in Miles Davis' *Blue In Green* emanate from the empty space between the two speakers, sounding crystal clear and side-stepping hardness.

Triumphant towers

Dynaudio's rare foray into entry-level territory is an unmitigated triumph. It has poured its high-end *savoir faire* into a relatively affordable multichannel package and the result is a fabulous system that performs well beyond its price tag.

This ensemble delivers one of the most natural and cohesive soundstages I've heard at this price, while dredging up bucketloads of detail and filling the room with frighteningly visceral bass. And although they're not the most glamorous speakers Dynaudio has produced, the build quality and finish are every bit as luxurious as you'd expect for the money. Great Danes? Bloody brilliant Danes more like ■

HCC VERDICT



Dynaudio Emit 5.1

→ £3,200 → www.dynaudio.com

WE SAY: This system offers a natural, transparent presentation, tons of detail, superb bass slam and high-quality construction. Only the asking price and workmanlike looks count against it

2. Our set came in satin black lacquer – there's a satin white option, too

3. The SUB 600 features a slave output to link to other woofers



Mark Craven cracks a smile while listening to Denon's budget AV receiver contender

Fun, fun, fun with Denon

Denon's AVR-X2300W is an AV receiver after my cash-conscious heart. Available for £500, it offers buyers at this price everything they will probably expect, all wrapped up in a neat design and delivered with a welcome understanding that those investing in home cinema separates may still be AV novices.

It's a seven-channel Dolby Atmos AV receiver (claiming a 95W-per-channel – into eight Ohm – measurement via its discrete amp design), so made for 7.1 or 5.1.2 setups. DTS:X is promised via a firmware update that, I'm told, should arrive in the next month or so. Auro-3D, while offered on more expensive Denon amps as a paid upgrade, isn't an option – not least because the X2300W doesn't have the channel output to do it justice.

The feature set is comprehensive. Ethernet/Wi-Fi and Bluetooth connections cater for audio streaming, with format compatibility ranging from the prosaic (MP3) to the esoteric (DSD 5.6MHz). These are backed up by AirPlay, Spotify Connect and 'net radio integration. Room EQ is provided via Audyssey's MultEQ XT platform (with dynamic volume/EQ functionality). There are dual outputs for twin-subwoofer setups.

HDMI provision is bang up-to-date, too. The amp features eight inputs (one front-mounted) and twin outputs, with HDCP 2.2 and 4K/HDR support across the board. Below these on the backpanel you'll find some (but not an overload of) analogue inputs and legacy AV connections.

While not integrated with Denon's HEOS multiroom kit (see p20), running a second audio zone is an option.

Of course, as a machine crafted to hit a specific, relatively low, price-point, the Denon does show some signs of corner-cutting. Firstly, while the overall aesthetic is pleasant enough – though very much adhering to the time-honoured 'two-knobs-and-a-display' design – get up close and you'll discover the central portion of the fascia is hewn from plastic. Then there are features missing that some buyers may want and will have to look for elsewhere, such as multichannel analogue inputs, Denon's proprietary Link connection standard (for use with its BD player line), and 12V trigger output.

The AVR can be controlled via a free app, or the supplied handset. The latter is rather lightweight and generally free of button clutter. There are source keys for Blu-ray, CD, etc – as opposed to the once-typical HDMI 1, HDMI 2 and so on. In theory, this makes it easier for casual users to drive the Denon, but depends on you actually hooking up the right gear to the right input. Step forward Denon's well-judged Setup Assistant, which guides you through installation in a logical manner, backed up by neat onscreen visuals (although we're still not talking Sky Q levels of panache) and simple terminology. There's a quick start guide included in the box, but for more detailed instruction you have to go online for a downloadable PDF manual.

The setup mic required to run Audyssey comes with a (cardboard) tripod stand, which is useful for getting it to ear-height. Run the automated calibration, and it goes through a minimum of three measurements, so isn't the quickest process around.

All aboard the Denon express

The AVR-X2300W, given the enormous drama of *Unstoppable's* DTS-HD MA 5.1 mix and a Monitor Audio MASS speaker array, proves to be a little receiver with big ambitions. It creates a fulsome surround soundfield packed with clanking metal, screeching wheels and pulsing score, chewing up the soundmix with gusto and sounding lively and unrestrained.

In this regard it's rather addictive, steering clear of sounding dry and analytical, and not veering towards high-frequency impact at the expense of solidity lower down the frequency range.

In the Tony Scott flick, when the runaway freight train hurtles through a level crossing (Chapter 10), the Denon paints a tense sonic

AV INFO

PRODUCT:
Seven-channel
Atmos AV receiver

POSITION:
Lower/mid-range
– higher-end AVR-X
models are arriving
later this year

PEERS:
Pioneer VSX-1131;
Yamaha RX-V581

**1. DTS:X support
will be added via
a firmware update**

**2. Denon's remote
aims for ease of use
by limiting buttonry**



picture. Barking dogs and bird song, short-wave radio chatter... all give way to a tremendous impact as a truck clatters into a horsebox. And as the train approaches the crossing, seconds away from mowing down some equine escapees, the soundtrack swells, ratcheting up the drama. Another bass-heavy transient later, and my listening room is filled with the sound of a train shunting through, right to left. It's explosive stuff, but presented with clarity and an ear for detail.

Audyssey here offers three flavours – Reference, L/R Bypass, Flat – plus off. In my room, I quickly realised it was working well, pulling the soundfield together and generally tightening everything up. That said, it pays to experiment. I found I preferred the L/R Bypass mode, which left my front L/R speakers unfettered, to the default Reference setting.

Image steering is head-whippingly fun. With the Atmos soundmix of *Sicario*, and its third act subterranean firefight, the soundfield is awash with well-placed effects, not least the bullet-fire that zips front-to-back. The Denon lifts these out of the mix, while smaller details – falling bits of masonry, footsteps in the sand – plus the repetitive, foreboding score, round out the soundscape.

And there's enough dynamic impact to make this shootout a believable, immersive experience. Replacing a twice-the-price Onkyo in my setup, the X2300W obviously lacks some of the poise and presence afforded by a bigger, beefier amp, but it's not a lily-livered AV waif either.

While it supports hi-res playback, the AVR-X2300W is equally likely to be fed low-bitrate sources, be it via the Spotify Connect client or from Bluetooth-connected gear. An Amazon Music-delivered MP3 of Slayer's rough and ready 1983 thrasher *Black Magic* sounds, er, pretty rough and ready. As always, I treat such sources with a dose of AV and play them through multichannel stereo mode. A straight stereo runout of The Police's *Every Breath You Take*, via CD, provides a better example of the Denon's well-balanced delivery, with the palm-muted guitar intro sounding robust and rhythmic.

Compared to some rival brands, Denon doesn't offer much in the way of music DSP modes. Choose from Rock Arena, Jazz Club, Matrix and Virtual. To be polite, I'll say the latter sounds 'interesting'. The Audio Restorer function, for compressed music sources, is set to 'Low' by default. There are two higher levels, plus 'Off'. Again, it's worth spending time experimenting, as I found it clearly brought greater punch to tunes. I like the safety net it provides, particularly given the dodgy 'net radio stations I often listen to.

SPECIFICATIONS

DOLBY ATMOS: Yes **DTS:X:** Via future firmware update **THX:** No **POWER OUTPUT (CLAIMED):** 7 x 95W (8 ohms) **HDMI:** 8 x inputs; 2 x outputs (all v2.0a) **AV INPUTS:** 3 x composite video; 2 x digital audio (2 x optical; 0 x coaxial); 4 x analogue audio **ANALOGUE MULTICHANNEL INPUT:** No. **MULTICHANNEL OUTPUT:** No **MULTIROOM:** Yes, Zone 2 (audio) **VIDEO UPSCALING:** Yes, To 2160p (HDMI inputs only) **DIMENSIONS:** 434(w) x 167(h) x 339(d)mm **WEIGHT:** 9.4kg

FEATURES: Built-in Wi-Fi and Bluetooth; Ethernet; Audyssey MultEQ audio calibration; HDCP 2.2; hi-res audio playback (DSD 2.8MHz/5.6MHz, FLAC, ALAC, AIFF, WAV); multichannel stereo mode; Pure Direct; Setup Assistant; AirPlay; Spotify Connect; Denon AVR 2016 remote app (Android/iOS); internet radio; ISF certified; eco mode with real-time onscreen monitoring

PARTNER WITH



SPOTIFY CONNECT: Denon's amp integrates Spotify Connect, enabling music streaming from your device through your AV setup. The service offers the usual 'millions' of tracks, plus curated playlists. Needs a Premium sub (£9.99p/m).

Making the channel choice

One consideration for potential buyers of the Denon AVR-X2300W is, of course, the seven-channel amp stage. The advent of upfiring speakers has made it easier than before to boost a speaker array with minimal fuss and outlay. If you have a 5.1.2 setup but fancy 5.1.4 down the line, this receiver can't accommodate your needs – there's no multichannel pre-out to run into a separate power amp.

Beyond this concern, and the touch of plastic to its fascia and the somewhat poor manual included in the box, there's nothing much negative I can say about the AVR-X2300W. As £500 home cinema amps go, it's a cracker. Yes, its specification is stripped down in places, but not where it really counts. Anyone auditioning an amp to handle their next-gen sources should give this a whirl ■

HCC VERDICT



Denon AVR-X2300W

→ £500 → www.denon.co.uk

WE SAY: Easy to use and packing all the key features, Denon's mass-market AVR presents multichannel soundmixes with panache. One for your shortlist!

3



3. HDMI provision is generous – there are dual outputs for twin-screen systems

AVR850

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AV INFO

PRODUCT:
High-end 4K
HDMI scaler/
video processor

POSITION:
Joined by the
Radiance 21XX series
in Lumagen's stable

PEERS:
DVD0 iScan Micro

1. The Radiance Pro 4242 sports the industry standard 1U rack-ready dimensions

2. The remote offers keys for aspect ratio settings

Jon Thompson finds much to admire in Lumagen's newest outboard scaler

Polishing your pixels

Around twenty years ago an essential component of any high-end home cinema was a scaler, with companies such as Faroudja and Snell & Wilcox striving to deliver the very best picture from the humble old DVD. Twenty years later all equipment seems to have some form of scaler built in. So why the need for a high-priced outboard model, such as Lumagen's Radiance Pro 4242?



In essence, scaling is mathematically increasing the surface area of an image while maintaining its integrity. This can involve the intelligent creation of pixels; it's where art meets science. Getting, say, a 720 x 576 image scaled up to 3,840 by 2,160 on your new shiny 4K TV is not easy, and, unfortunately, the job done by the display isn't necessarily best-in-breed.

Step forward the Lumagen Radiance Pro 4242. Lumagen has been going since the late 1990s, founded by Jim Peterson, a former computer graphics processor engineer, based in Portland, Oregon. Peterson became obsessed with one thing – producing the best video image processor. Interestingly, he started in this business around the time Snell & Wilcox and Faroudja were pulling out – standalone scalers were always a niche product, and it's no doubt a tough market. But I think this certainly has the talent to succeed.

Slender silicon

The Radiance Pro 4242 is a relatively unassuming 1U black box with a single LED on the front, which shows if it's on (blue) or in standby (red). This model has six HDMI sockets – four inputs and two outputs. All can be configured to be HDCP 2.0 or 2.2, HDMI 1.4 or 2.0. There are other models with eight-in/four-out HDMI stages, and a simpler two-in/two-out offering. I'd suggest



the 4242 is the optimum combination for an average home cinema setup.

It's supplied with a fairly cheap-looking remote. Backlit, this zapper is the user's way of navigating the system – the Lumagen is controlled via a series MS-DOS-looking dropdown onscreen menus. It's worth stressing that this equipment needs a high level of competence to get the most out of it. Often it will be installed by a dealer/AV professional. So the menu system is functional and gets the job done, rather than looking sexy. But don't let the UI fool you when it comes to the box's underlying power.

I tested the Lumagen with what I consider some of the best high-end equipment around at the moment. For a TV, I used Panasonic's TX-65CZ952B OLED model. It's been marketed as offering 'Ultimate picture quality, true to the film maker's Intentions', which might be the case as long as the source is 4K, but how does it fare with SD material?

I also used the Sony VPL-VW5000ES projector. As this next-generation laser PJ sells for around £50,000, you would hope it can scale a Full HD Blu-ray to its native 4K resolution to the point where it looks like perfection.

Does adding a £4,000 scaler box to a £6,000 TV or a £50,000 projector make an image quality difference? And does it do anything else? Let's find out.

Ready for anything?

At the heart of the Radiance Pro 4242 is an FPGA (Fully Programmable Gate Array) integrated circuit. This, in part, accounts for its cost, and gives it a level of futureproofing. In theory, Lumagen can add as many functions and features as it can come up with as long as they don't exceed the memory size or bandwidth of the FPGA chip. The company currently offers lifetime upgrades. An example of how flexible FPGA design is, when 3D Blu-ray was launched it was an easy upgrade to earlier Radiance models to handle the format. A traditional design would've needed a whole new chip/device. Looking at the specs, the Radiance Pro should be able to handle Dolby Vision at 12-bit: at the time of writing, there is no external device that plays back this format, though.

Now, if you bought the Radiance Pro and just plugged it in you wouldn't be disappointed as it's set to auto by default. But this would be like having a McLaren F1 sports car and not getting out of first gear.

That said, on my two display devices, even in auto mode, the image quality improvements are obvious. Viewing the SD version of BBC News 24 on the Panasonic OLED from a Sky box yielded a picture that looked unfocused and smeary. Stick the Lumagen in between and suddenly it feels like you're watching the HD version. Put the HD version of the channel through the Lumagen and it looks truly stunning. News has never appeared so detailed on a 4K TV.

Sony's VPL-VW5000ES uses the company's proprietary video scaler, dubbed the Reality Creation engine. It's good, but it's not great. With the scene in *Spectre* on Blu-ray of 007 walking through the square in Whitehall, our hero is tiny in the overhead frame as he ambles over a very detailed circular brickwork floor. The projector does an efficient job of mapping the image to 4K. However, once put through the Lumagen, the Sony's own scaling seems, by comparison, coarse and harsh. It's as if each pixel has been hand-crafted by the external scaler, and the Sony now is shining as you would expect from such a big-ticket projector.



Moving on to *The Revenant*'s Ultra HD BD/Full HD BD release. Via the Panasonic – through the Lumagen – the regular 1080p Blu-ray appears truly cinematic. What was interesting was that you could see that the 4K UHD disc (without the Lumagen in play and with HDR turned off) had the edge with resolution but not as much as you would have thought.

Each HDMI input has basic picture controls (Brightness, Contrast, Colour, Hue, Gamma) that can be stored in individual memories. That's not a reason to buy this, but a very cool feature the Lumagen can offer is outputting the picture through a 3D colour cube. This has nothing to do with 3D images, by the way.

With *The Revenant* I was not using the Radiance Pro in auto mode, I was in fact running a custom colour cube, created by profiling the Panasonic TV (for a more detailed discussion of profiling *et al*, see my column on p76). The Lumagen offers what is considered the industry standard for colour cubes in the format of a 17 x 17 x 17 3D cube. Go to the effort of implementing one, and your display equipment has moved up a notch to a professional level. I don't think even Panasonic would have seen its TV look so good.

This is where you would need the Radiance Pro professionally set up, and I used Light Illusion software to create a profile and export the colour cube of the Panasonic. Lumagen's hardware integrates nicely with that suite.

Also offered by this black box of tricks is Darbee processing. This can be set to off, and in my opinion that is where it's best left. I understand what it does and how it works, and I am not as down on it as I was when it started popping up on other equipment. So why turn it off? Because one setting does not fit all. I found that with some shots it can make an image look more dynamic, but with others it can be distracting.

You can also use the Radiance Pro to create custom resolutions and aspect ratios. If you have a projector (anamorphic lens) or a display with a 2.35:1 aspect ratio, you might want to pixel map it. To do this, you need to do some maths and set the pixel clock, which takes a few minutes to do. I created an Excel table where if you put in your horizontal and vertical pixel resolution and frame rate it would give you the numbers to dial in.

Scalers can, of course, introduce artefacts, but this high-end model appears immune. The Radiance features Lumagen's proprietary 'NoRing' scaling. Using a test pattern generator, plus calibration discs from the likes of Spears and Munsil and Joe Kane, and some proprietary software, I subjected the scaler to a processing obstacle course, which it passed with flying colours – there were no

SPECIFICATIONS

CONNECTIONS: 4 x HDMI inputs; 2 x HDMI outputs; 12V trigger; USB (for updates); RS232 control port **OUTPUT RESOLUTION:** Up to 4K/60p **DIMENSIONS:** 432(w) x 50.8(h) x 254(d)mm **WEIGHT:** N/A

FEATURES: 17 x 17 x 17 3D colour management system; REC.2020 colour space support; DARBEE DVP enhancement technology; Lumagen NoRing scaling; per-pixel motion adaptive deinterlacing; 2D and 3D source support; anamorphic screen support; 21-point parametric greyscale calibration; independently programmable outputs; vertical keystone correction; FPGA circuit design; optional rack ears; remote control

PARTNER WITH



DSPEAKER ANTI-MODE 8033: Away from video, this £250 system-boosting gizmo sits between your receiver's LFE output and your subwoofer's line-level input, analysing and correcting in-room low-frequency response for a better bass performance.

dropped frames, judder or deinterlacing issues, and there was no softness or loss of resolution to images. It even did a great job on detail tests that it should not have been able to pass, tested against Digital Vision's pro-grade DVO Phoenix software.

In all, the Radiance Pro seemed to be completely transparent, not adding any artefacts or noise to the image. I found that when it was not in play in my setup, I could see that other hardware was actually degrading the picture, even though it claimed to be transparent.

Please don't go

This is a reference device that could easily be at the core of any high-end system. It offers even more features than I've covered here. And it's one of the devices that once set up you will forget is there, as it just works away in the background – until the moment you switch it off, when you'll wonder how you lived without it. Yes, it's not cheap, but it lives up to the price tag, and allows connected devices to live up to their potential. I don't want to see it leave my system ■

HCC VERDICT



Lumagen Radiance Pro 4242

→ £4,200 → www.lumagen.com → www.convergent-av.co.uk

WE SAY: Reference status picture processing with a wealth of controls and futureproofing potential. Worth the outlay for high-end systems, but installation isn't for the AV novice.



3. The Radiance Pro line includes models with more HDMI inputs/outputs

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AV INFO

PRODUCT:
Full HD SXRD
projector

POSITION:
Below Sony's
4K-resolution home
cinema models

PEERS:
JVC DLA-X5000;
Optoma HD91+;
Epson EH-TW7200

Sony's latest projector sets the bar for the mid-priced Full HD projection market, suggests **John Archer**

Superstar Sony loves 1080p BD

This projector arrives on the back of plenty of anticipation. Its predecessor, the HW40ES, was a leading light in the sub-£2,000 price bracket, and since that model was launched Sony's projector division has gone from strength to strength with its native 4K/high dynamic range-capable VW320ES and VW520ES home cinema beasts.

The HW45ES is not, though, a native 4K projector. It's Full HD only. Nor does it support HDR. This is perhaps to be expected of a home theatre PJ retailing for £1,850, although Epson's EH-TW7300, which is due to arrive in September, will bring HDR and uprezzed 4K playback to the market at £2,100.

Apart from these less than state-of-the-art specs, in most other ways the HW45ES is a serious proposition, and Sony claims that its innards have undergone a radical reworking, resulting in improved colour and noise handling.

The projector has a brightness rating of 1,800 Lumens (a slight increase from the 1,700 Lumens of the HW40ES), and introduces an improved alignment layer for its SXRD chipset that hopes to reduce light 'scatter' to boost black levels and contrast. Also present to try and optimise the performance with any source, even standard-definition ones, are Sony's Reality Creation and Super Resolution processing systems, and Motionflow technology to be called on to tackle potential judder and blur issues. There's also a new low-latency mode – Input Lag Reduction – for gaming which, when tested, resulted in a highly impressive response time of barely 15ms. And then there's a long-life lamp reckoned to soldier on for a massive 6,000 hours if you stick with the projector's most economical lamp setting.

What hasn't changed, though, is the design. The attractive white (black is also available) exterior looks the same as the one wrapped around the HW40ES. Connections are side-mounted and a pretty minimal; there are two HDMI inputs, a USB for firmware updates, and IR and RS232 ports. There's no 12V trigger or analogue AV inputs. That latter isn't a big deal, but the former could be.

Be careful with contrast

Setup is relatively straightforward. Zoom (a handy 1.6x) and focus have to be operated manually rather than

from the Sony PJ handset. There are (wide-ranging) vertical/horizontal image shift wheels to get your image positioned correctly, while the throw ratio of 1.36-2.16:1 should suit most typical-size cinema rooms/screens.

Once you've got the basic image setup finalised, I'd recommend turning the Contrast Enhancer system (contained in the Cinema Black Pro menu section) down to Low or off entirely from the default setting, which is Middle. Otherwise, I discovered, dark areas of the image can look empty and dominant.

It felt to me, too, that the Sony operates more comfortably for dark room viewing with the lamp set to Low rather than the High default used even with the projector's two popular Cinema Film picture presets. The higher lamp mode causes greyness over black areas, a slight reduction in light uniformity, an increase in source noise, and a slightly jaundiced look to some colours.

You should also turn off all noise reduction systems when watching any half-decent HD source, and while Sony's True Cinema Motionflow processing option is effective and tries to retain the slightly 'pulsing' look of 24p film, I ended up turning it off completely, as for me the HW45ES's native motion handling is good enough not to need any help.

Where Sony's Reality Creation system is concerned I'd just about say leave it activated. It adds quite a lot of sharpness to the image without being ghastly. AV purists will, of course, leave it off on principle.

Class act

Housekeeping issues dealt with, the HW45ES's pictures once again put Sony right at the forefront of the sub-£2,000 projector class.

The performance trait that stands out most is the exceptional detail and clarity the image contains. During a run through of Mel Gibson's beautiful *Apocalypse* I swear ➤

1. The handset offers easy access to Sony's picture presets

2. The PJ sports an identical chassis to its HW40ES predecessor





2

HOME
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SPECIFICATIONS

3D: Yes. Active **4K:** No. 1,920 x 1,080 **HDR:** No **CONNECTIONS:** 2 x HDMI inputs; IR input; RS232; USB port for firmware updates **BRIGHTNESS (CLAIMED):** 1,700 Lumens **CONTRAST (CLAIMED):** N/A **ZOOM:** 1.6x optical **DIMENSIONS:** 407.4(w) x 179.2(h) x 463.9(d)mm **WEIGHT:** 10kg

FEATURES: 6,000-hour claimed lamp life (on Low lamp mode); black or white finish options; 22dB claimed minimum fan noise; Reality Creation upscaling processing; Motionflow; vertical (+/- 71%) and horizontal (+/- 25%) image shift; 40in-300in image size; 215W lamp; 1.36:1-2.16:1 throw ratio

PARTNER WITH



SONY UHP-H1: Keep your video display chain all Sony with the addition of its £400 UHP-H1 Blu-ray player. Not a 4K deck, this still has its charms, not least its tidy design and admirable construction. DVD-A and SACD playback are on the menu too.

I could see little details I'd not witnessed before on an HD projector, in everything from close-ups of the actors' faces to the dense flora and fauna of the forest and the wide vistas of the Mayan kingdom.

As well as making *Apocalypse*'s BD visuals look dense, immediate and immersive, the level of detail is such that it seems to open up the sense of space in the picture. I know I'm merely looking at a flat image on a screen, but it doesn't quite feel like it.

Sony's Reality Creation processing, if you use it, plays a role in this sense of sharpness and spatial volume. But it's only one part of the story. Contributing in no small measure to the picture's naturalism and

'There's an appreciable intensity and clarity to the Sony HW45ES's images that's hard not to love'

depth is some nuanced handling of light. The amount of shadow detail the PJ is able to resolve in the darkest corners of *Apocalypse* without compromising black level depth really is exemplary. This helps create a much more consistent image tone, as *Apocalypse* shifts between dark and bright sequences, than you usually get with affordable projectors.

It's not just between scenes that the Sony's excellent light management shines. *Apocalypse*'s early jungle sequences feature an extremely difficult mix of dark and light tones, yet the HW45ES has enough native contrast to render the subtle light shifts with authority, never letting any dark or light shades dominate. It's hard to imagine any DLP or LCD solution being able to offer the same sort of single-frame light sophistication – and it's in this respect, too, that the HW45ES delivers its biggest step up from the HW40ES.

A final factor contributing to the projector's spectacular clarity is its colour handling. There are few films with a denser mix of tones and explosive colour dynamics than *Apocalypse*. Every jungle leaf seems to have a natural colour life of its own, while the preponderance

of human flesh on show throughout the film benefits from a deft appreciation of the sort of slightly warm tones that make images look cinematic. Having strong black levels to 'bounce off' doesn't do the projector's colours any harm either.

There's an appreciable intensity to the HW45ES's pictures that it's difficult not to love, be it in the darkest night-time scenes or ultra-vivid sequences like *Apocalypse*'s dramatic escape from 'trial by spear'. However, for all their brilliance, images aren't nearly as impressive in the black level response and contrast departments as those you can get from PJs from Sony's big rival, JVC. As a counterpoint to that, JVC's entry-level DLA-X5000 retails for more than twice as much. It'll be the aforementioned Epson rival – when it arrives – that the Sony more urgently has to see off.

Entering another dimension

The HW45ES has an integrated 3D sync transmitter. No 3D glasses are provided as standard with the projector alas – although for once we were at least provided with a pair for this review.

The projector is hit and miss with 3D. In the 'hit' column, its pictures look crisp and suffer with little crosstalk ghosting noise. The strong contrast performance helps paint a natural sense of space, too. However, Sony's current 3D glasses design lets way too much light in around the side of the lenses, and the amount of brightness you have to sacrifice when switching from 2D to 3D is disappointingly extreme.

Let's not let a little 3D dimness spoil the party, though. Add a whisper-quiet running noise when running it in Low lamp mode to the HW45ES's prodigious 2D picture talents and you've got a projector that currently can't be bettered without spending substantially more ■

3. The absence of a 12V trigger will be a blow to those with low-cost system automation dreams

HCC VERDICT



Sony VPL-HW45ES

→ £1,850 → www.sony.co.uk

WE SAY: The HW45ES manages to improve on even the efforts of its illustrious predecessor to become the new best sub-£2,000 projector money can buy



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What happens when you make an AV package out of the original broadcast monitor? **Ed Selley** finds out with Spendor's traditional-looking S3/5R2 array

Home cinema with a bit of history



For many years, it's been fashionable for brands to point to their heritage in studio and professional work to bolster their credibility when selling you speakers for the home. What you see here is one of the ultimate expressions of that as a concept.

These little speakers are the spiritual descendents of the BBC LS3/5a broadcast monitor. This was designed in the late 1960s to allow the BBC to monitor outdoor broadcasts, because all existing small speakers at the time weren't deemed up the job.

Having designed the LS3/5a, the Beeb realised that it were unable to manufacture them in the quantities needed. It therefore contracted some speaker manufacturers to build them under license. One of these companies was Spendor, which produced the original LS3/5a speaker for

many years. Yet Spendor differs from most other companies involved with LS3/5a production in that it took the basic design and evolved it. As such, the S3/5R2 you see here is the smallest member of the Classic range and a 21st century take on the original.

The apple hasn't fallen too far from the tree in this instance, though. The S3/5R2 is still a two-way, sealed cabinet loudspeaker. And the dimensions remain rather 'old school' compared to more modern thinking. Each speaker is a whisker over 30cm tall and 16.5cm wide – which is normal enough – but at a slender 18.5cm deep they are more compact than most rivals. They are rather more flexible too, as there is no bass port, and can even be wall mounted. Spendor offers a mount to do this.

Of course, the physics-minded of you will be looking at those dimensions and the lack of a port and thinking that the Spendor is unlikely to be much of a bass monster. And you'd be right up to a point. The original purpose of

AV INFO

PRODUCT:
5.0 standmount
speaker package

POSITION:
The S3/5R2 is the
entry member of
the Classic Range;
the CR3 is the only
centre channel

PEERS:
ATC SCM11;
KEF R300



**HOME
CINEMA**
Choice
BEST BUY

1. The speakers ship
with black grilles to
keep the drivers safe

the LS3/5a was to monitor speech, not really requiring much in the way of low-end extension. Yet the bass depth of the S3/5R2 is rather more than its ancestor.

This is thanks to a 5.5in polymer driver revised for this R2 model. It's partnered with a 0.86in soft dome tweeter, complete with wide surround, that is used in all Spendor Classic speakers. The bass driver gives the S3/5R2 a claimed low-end response of 75Hz (+/- 3dB). Hardly seismic but sufficient for an acceptable sub crossover. And Spendor claims that this increase in low-end presence hasn't come at the expense of the midrange transparency that the LS3/5a is renowned for.

The CR3 centre speaker uses a different naming system but is fairly obviously derived from the S3/5R2. It features the same dual driver array but is adapted to lie on its side. Like its stereo brethren, the CR3 is sealed.

This package might not be the last word in statement design but it is beautifully finished and very handsome. Our samples arrived in a cherry veneer (there are black ash, light oak and dark walnut options) and they manage to feel like furniture rather than AV equipment. In a good way.

Keeping up with the times

There's a temptation when dealing with a speaker with origins nearly fifty years old to assume that this will have a direct bearing on how it sounds – as if everything played through them is going to magically transmogrify into *Chitty Chitty Bang Bang*. This is very wide of the mark. The reason why the LS3/5a remains a revered speaker is that in terms of detail, cohesion and tonality it is exceptional, and this is very much the case with the Spondors.

With this array let loose with Zack and Gray's arrival at the park in *Jurassic World*, these traits are demonstrated to impressive effect. The dense, overlaid voices and effects are prised open into an involving and believable soundfield. Snippets of conversation, and the day-to-day sounds of the park, are turned into a space that you are very much part of. Nothing is being forced into your attention artificially.

This resolving power is capable of handling action, too. The initial attempts to contain the *Indominus* are conveyed with an effortless sense of detail and three-dimensionality. The Spondors don't deviate from the idea that their job is to add believability to onscreen images, and they manage this with absolute assurance. And even with levels pegged at the firmly antisocial, they remain smooth and refined, yet still extract every last detail from the soundmix.

There is tonal realism to the Spondors that isn't just impressive at this price, it's impressive at any price. They can seemingly handle any voice, instrument or effect in

SPECIFICATIONS

S3/5R2

DRIVE UNITS: 1 x 5.5in Ep39 polymer midbass driver; 1 x 0.86in soft dome tweeter
ENCLOSURE: Sealed **FREQUENCY RESPONSE (CLAIMED):** 75Hz-20kHz **SENSITIVITY (CLAIMED):** 84dB **POWER HANDLING:** 100W **DIMENSIONS:** 165(w) x 305(h) x 180(d)mm **WEIGHT:** 4.6kg

CR3

DRIVE UNITS: 1 x 5.5in Ep39 Polymer midbass driver; 1 x 0.86in soft dome tweeter
ENCLOSURE: Sealed **FREQUENCY RESPONSE (CLAIMED):** 75Hz-20kHz **SENSITIVITY (CLAIMED):** 84dB **POWER HANDLING:** 100W **DIMENSIONS:** 305(w) x 160(h) x 180(d)mm **WEIGHT:** 4.6kg

PARTNER WITH



SVS SB-1000: As a 5.0 package, the Spondors require a subwoofer for genuine AV excitement. Step forward SVS's usefully compact SB-1000, a £450 woofer using a 12in driver and punchy 300W amplifier for a superior performance.

their frequency range and reproduce it with weight, scale and honesty, nailing the difference between sounding good and sounding real.

And if you ask the Spondors to reproduce something more sedate than dino mayhem, the results are no less ear-pleasing. There's an effortless sense of timing that really shines through, resulting in a crisp, clean soundstage and rhythmic reproduction of musical scores.

You will need a similarly top-notch subwoofer to go with them, though. Used with a BK Electronics P300-SB, the results are pretty good but even this well-sorted piece of engineering doesn't feel as fleet of foot as the Spondors. Unfortunately, the company doesn't manufacture subs, so there's no aesthetic match available.

Time and time again across film and TV material, these speakers deliver a performance that almost perfectly balances the requirements of insight, tonality and placement. The CR3 centre channel integrates well with the left and rights and allows for a seamless arc of sound with no obvious gap. Some rivals can provide a greater sense of immediate excitement, with higher-frequencies that bite harder and bass that punches deeper, but few of them will be as adept at providing long-term listening satisfaction and that wonderful sense of transparency.

Go on, be brave...

While the asking price of this array certainly isn't budget, there are a lot of rival packages to consider. Opting for a quintet of speakers with public service broadcaster DNA from a small British manufacturer, when there are space age materials and radical designs doing the rounds elsewhere, takes some bravery. Yet having spent time with them, I find myself smitten by these little standmounts and their natural, compelling sound signature ■

2. Build quality on the Spondor speakers is excellent with sturdy cabinets and robust binding posts

2



HCC VERDICT



Spendor S3/5R2+CR3 (5.0)

→ £2,700 → www.spendoraudio.com

WE SAY: An outstanding compact speaker system that balances tonality, detail, excitement and refinement in an elegant package. You just need to add a subwoofer

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"reference grade kit"



BDP-103EU

"an absolute triumph"

BDP-105EU



"the most significant evolution of the Blu-ray player since the format was developed"



BDP-103D

"an extra trick up its sleeve"

BDP-105D



"Blu-ray at its brilliant best"



What's next...?

oppo

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The dawn of a new age of entertainment?



Rik Henderson ignores the looks from his family members and samples the delights of the Oculus Rift VR headset. Can virtual reality drag him away from his flatscreen TV?

VIRTUAL REALITY IS not new. We had headsets in the early 1990s that purported to offer immersive journeys into other worlds. Even Atari's '80s arcade machine *Battlezone* had a visor that you leaned into to view the action.

However, VR technology has been largely unimpressive until now. The other worlds back then turned out to be housed in coin-op emporiums that smelled like a teenager's bedroom. The graphics were blurry, the experiences confusing and the concept died. Or, at least, lay dormant for many years.

Now it is back, kicking and screaming into a world where the resolution and power of a phone are more than most sophisticated '90s arcade cabinets could muster. Some have called 2016 the year of virtual reality, and while that's unlikely to displace the monkey on a Chinese calendar, there is weight behind such a claim.

There are three major VR headsets – or soon will be. The Oculus Rift tested here is rivalled by HTC's already-on-sale Vive, while Sony's PlayStation VR should follow in October. There have been bumps along the way – not least that Oculus couldn't make units quickly enough to satisfy demand – but even those have been ironed out in recent times. Virtual reality is finally, assuredly here and it has every chance of having significant impact on the world of electronic entertainment.

Kickstarting VR

Oculus was one of the first companies to convince that VR could make a comeback. The developer and manufacturer had early, enormous success in raising funds on Kickstarter

in 2012, promising a headset that could provide the technology to match its ambition. And because of the buzz the company generated, it was subsequently bought for more than a few carrier bags full of cash by Facebook.

There have been numerous development kits and concept headsets in the last four years, which have found their way into the hands of software developers and engineers alike. So by the time the consumer model was available, there would be plenty of uses for it: games, interactive demonstrations of VR's muscle, even films.

And that's where we are at today. Oculus has fulfilled its pre-orders for the Oculus Rift consumer edition and is able to ship new orders within two to four days, rather than two to four months, as before. You can now buy one 'off-the-shelf', so to speak, but should you?

The answer to that is more complicated than you might think, and I'll address it later. It depends on not just the hardware and software currently available, but the potential. For now, let's look at the device itself.

Of the VR headsets I've played with extensively over the last year or so, the Oculus Rift is the lightest and most comfortable to wear. All VR headsets suffer from looking like a shoebox strapped to your face, but I feel the Rift does it more elegantly than most.

It is predominantly made from plastics that are coated to give a velvety, soft touch. There's a decent amount of foam around the eyepiece for comfort, which can also be removed and replaced, should it perish over time. The headset is designed to work as well for glasses wearers as those without, and there is a lever on the bottom that

AV INFO

PRODUCT:

Virtual reality headset for use with a (high-end) PC

POSITION:

Oculus's first consumer model, following concept/development sets

PEERS:

HTC Vive; Samsung Gear VR

can adjust the spacing of the lenses to ensure images are sharp and well-focused.

An adjustable top strap fits over your head. You need to make sure the fit is tight because image quality also requires the eyepiece to be as snug as is comfortably possible. Unlike some rival devices, you soon forget you are wearing the Rift when you're plunged into a VR experience.

Most headsets are alike in functionality, but the Rift also includes built-in headphones – a must as far as I'm concerned. While using the HTC Vive, for example, you have to grope around with the device on your noggin in order to get a pair of cans over your ears. By including them on the Rift, the Oculus headset is a true all-in-one. Bar picking up a controller or remote, you don't need to muck around with anything else after you put it on. You're ready to get playing.

'At times, the Rift offers magical, incredible escapism, but these times are currently few and far between'

The headset senses when it is worn and instantly sparks up the Oculus content hub for you. From there you can navigate to a game, experience or 360°-video.

You do need a high-end gaming PC to drive the thing of course, which hooks into the Rift via a split USB/HDMI cable. If you don't have a potent PC already (Mac support isn't offered), Oculus sells several options with its headset. I'd advise putting aside an extra £500 to £1,000 to pay for the computer – and that might price you out of a purchase.

Graphical grunt required

The better the computer, the better the experience. Considering its development time, there are many games and interactive movie experiences available from the off, with several being free to download. All need graphical grunt, though, to look their best from inside the device.

The headset has two OLED panels, each with a 1,080 x 1,200 resolution. They refresh up to 90Hz, to ensure smooth, consistent 3D movement. In practice, the motion is instant and rarely induces sickness. It depends on the software itself, with a couple of developers not quite grasping how our brains struggle to associate fast action with lack of physical perambulation, but on the whole you won't notice any lag and gentler experiences are smooth.

SPECIFICATIONS

Recommended PC hardware

CPU: Intel i5-4590 equivalent or greater **GPU:** Nvidia GTX 970/AMD R9 290 equivalent or greater **RAM:** 8GB+ **OUTPUT:** HDMI v1.3 video output **INPUT:** 3 x USB 3.0 ports plus 1 x USB 2.0 port **OS:** Windows 7 Service Pack 1 64-bit or newer

Oculus Rift

DIMENSIONS (HEADSET): 102(h) x 216(w) x 171(d)mm **WEIGHT:** 470g **FEATURES:**

Comes with sensor, wireless Oculus remote, Xbox One Controller and Xbox One wireless adapter for PC; 2,160 x 1,200 resolution; OLED display panels; adjustable head strap

You will notice the pixels in front of your eyes if you're looking for them, but half the time you won't – the VR experience is typically more than enough to distract you. It's only during loading or stationary scenes that you'll see the pixels themselves. Some games or interactive clips do lack in resolution and can look blocky, but that's because of their own graphical foibles rather than the headset's.

And that's the rub. No matter how good the Oculus Rift hardware is, it will live or die on its software support. Even with the lead time and drip feeding of devkits, it requires some killer apps to really make it all worthwhile. At present it is a great folly, something to impress friends and folks, but unless you are a hardcore gamer who wants to explore every corner of *Elite Dangerous* or take every turn on *Project Cars*, there are few other stand-out software options.

The potential for VR movies is great, and there are several, wonderfully immersive short films and cartoons available to watch for free, but it needs more, much more to recommend fully at this moment, especially for those used to the AV excitement of a home cinema.

At times, it offers magical, incredible escapism, but these are few and far between. The addition of touch controllers later this year, which essentially give you two motion-tracked hands to play with in the virtual space, will no doubt open flood gates for content. Until then, however, you are paying a lot of money for promise over practicality. And that's the danger of being an early adopter ■

1. Oculus has built headphones into the Rift, meaning separate cans aren't needed

2. The headset is supplied with a motion-tracking sensor and Xbox controller

HCC VERDICT



Oculus Rift

→ £500 → www.oculus.com

WE SAY: The VR headset that started the trend is finally here but needs more support in the software stakes to justify its price. High-spec PC required, too.



Richard Stevenson auditions a Dolby Atmos soundbar setup that promises ease-of-use, multiroom integration and high performance

Samsung gets serious with sound

Soundbars are big sellers on the high street but they can get a cold shoulder from the home cinema aficionado seeking authentic surround sound. With its premium-priced HW-K950, Samsung has decided to address that very issue and do it in style. Although to call this simply a 'soundbar' doesn't do it justice.

There's a bit of backstory to this forward-thinking sonic invention. Last year, the company invested \$18 million in a dedicated audio development facility in Valencia, California. It's now known as the Samsung Sound Lab. Here, it set about creating a new soundbar system – with Dolby Atmos playback in mind – from the ground up. The Sound Lab team then enlisted Hollywood studio engineers for fine-tuning and made sure the new product got Dolby's official seal of approval, too.



AV INFO

PRODUCT:
Dolby Atmos
soundbar system

POSITION:
Samsung's premium
soundbar, above its
standard models

PEERS:
Yamaha YSP-5600;
Sony HT-RT5

A year later and the result is a complete sound package featuring soundbar, wireless surround speakers and wireless subwoofer. It's a true 5.1.4 configuration, is wall-mountable (with an optional kit) and comes with a sub that is fairly easily squirrelled away out of sight.

Many soundbars are relatively inexpensive plastic boxes employing 'off the shelf' OEM drivers, standard HDMI boards and cookie-cutter amplifier modules. Not so, says Samsung, when it comes to the HW-K950. Every key component, from the drivers to the shaped control buttons, are a bespoke Samsung design. It's fully active with one amplifier for every one of its 16 drivers, and it's wirelessly networked for streaming audio and use with Samsung's Multiroom controller app.

All this surround sound seriousness comes at an equally serious price. £1,300 is right up there at the very top end of the soundbar market. You could, just about, get an Atmos AVR, budget 5.1 speaker set and some upfiring units for about the same money. Mind you, it wouldn't look so good and, having spent a couple of weeks with the HW-K950, I'm not convinced it would sound as good either.

Channel crossing

The main speaker is a large and supremely well-built beast. It handles left, right and centre channels with a forward-facing driver array. Each of these channels uses two mid-range drivers and Samsung's ceramic-coated inverted dome tweeter. This has a frequency response dropping

right down to 400Hz – extremely low for a tweeter – so dialogue frequencies are handled without crossover to another driver. It should therefore deliver more natural-sounding voices with better intelligibility. Front height channels are tackled by full-range drivers on the bar's top section, angled to bounce Atmos info off a ceiling and towards the listening position.

At 1.2m long the 'bar is a good match for 55in screens but it's a neutral-looking design so should happily sit with larger or slightly smaller TVs. HDMI connectivity is perhaps a little more frugal than ideal – there are just two inputs. Yet both are 2.0a/HDCP 2.2 spec, and the HDMI output features ARC. Other hookups are digital optical audio, analogue aux, Bluetooth and Wi-Fi, plus wireless syncing from the soundbar to surround speakers and sub.

The compact yet fairly weighty surround enclosures connect directly to your mains supply via a lead that hides in the base to keep things clean and simple. These units feature full-range drivers for both front-facing surround channel and upward-firing rear height channel duty, each driver using its own 35W amplifier. The sub is a more traditional design, being an upright cabinet with a single side-firing 8in driver, a 160W amp and a large port tube you could lose a cat in.

The HW-K950 comes with a sleek and simple remote control that mirrors the design of the secondary remote on Samsung's latest TVs. You also get basic volume and input buttons on the side of the bar for manual use, while advanced features and music streaming services are all accessed by the aforementioned Multiroom app. This is comprehensively featured, easy to use and looks great – a rare trio combination indeed.

Straight out of the box the subwoofer and surround speakers are already linked to the soundbar, so it's plug and play. There is a connection button located on the underside to add the HW-K950 into a Samsung multiroom

'Samsung's HW-K950 is a complete Dolby Atmos 5.1.4 package, up there at the very top of the soundbar market'

ecosystem should you have more of the brand's audio goodies around the home. A scrolling blue display on the front of the 'bar gives the usual input and status information before switching off after a few seconds.

In addition to Atmos, you get a raft of virtual upmixing modes – movies, sport, music, night mode etc – that map any incoming format onto the full speaker array. There's no advanced speaker setup or Room EQ, just channel level trims if you feel the need for a little tweaking.

Living room luxury

I set up the HW-K950 in my lounge where home cinema equipment usually fears to tread, due to the demands of Mrs Stevenson. The main 'bar sat flat on an AV cabinet in front of my TV; the sub went down beside the cabinet to the right (driver facing outwards); and surrounds at about 80 degrees to the front-back centre line and at ear-height on stands. The speakers were on stands, not my ears.

Being well used to the aggro and extended faffing time required to set up most home cinema systems, the HW-K950 is a delight. After a bit of manual channel-

1. The HW-K950's surround speakers need a mains connection, but no speaker wire



level tweaking I felt good to go. Interestingly, with all levels set at 0dB out of the box, the Atmos height channels come in some 3-4dB hotter than the mains. This may be a function of my smooth, flat and relatively low ceiling, or just Samsung hammering home the height feature. Your experience may vary.

Connecting a Sky box to one of the HW-K950's HDMI inputs and a UHD BD player to the other, my Amazon Fire TV was left looking a little unloved. The workaround is to feed additional HDMI sources to the TV and use ARC – but do check your TV supports bitstream on ARC if you're connecting an Atmos source in this way. One minor gripe is that the HW-K950 does not support standby passthrough on the HDMI. If sources are connected through it then the soundbar has to be switched on and active to view, which means *EastEnders* in upmixed 5.1.4 is on the menu.

And thus endeth any negatives. Play anything from a broadcast TV stereo source to native Atmos through the HW-K950 and it sets a new standard for convenience system performance. Gone is the slightly nasal sound often produced by small-volume soundbar cabinets and the all-too-familiar mid-bass 'wump' of soundbar/sub combos is a thing of the past. The Samsung replaces these with high-fidelity and incredibly articulate sound with real dynamics. It's underlying sonic performance, irrespective of surround sound effects, Atmos or other trickery, is excellent.

Even with stereo TV, the HW-K950 creates an amazingly natural and realistic sound with solid imaging. From outside the listening room, dialogue from the BBC's *Versailles* has a presence that sounds like a conversation between real people on your sofa. That's a trick normally reserved for serious AVR and multichannel speaker setups. It is this naturalness and accuracy that makes the HW-K950 enjoyable with music too. Stream Spotify Premium or high-bitrate music on your device via Samsung's app and the HW-K950 delivers the goods much more like a decent stereo speaker system than a soundbar.

From this excellent base-level performance, Atmos and 3D surround sound absolutely shines. All of Dolby's Atmos

SPECIFICATIONS

DRIVE UNITS: 3 x 1.2in tweeters; 6 x 2.5in midrange drivers; 2 x 3in full-range drivers (soundbar); 4 x 3in full-range drivers (surrounds) **AMPLIFICATION:** 11 x 20W (soundbar); 6 x 35W (surrounds) **CONNECTIONS:** 2 x HDMI inputs; 1 x HDMI output; optical digital input; analogue 3.5mm; Bluetooth; Wi-Fi **DOLBY TRUEHD/DTS-HD MA:** Yes/Yes, Plus Dolby Atmos **SEPARATE SUB:** Yes, 160W, 8in driver **REMOTE CONTROL:** Yes, Plus Samsung Multiroom app **DIMENSIONS:** 1,210(w) x 82(h) x 131(d)mm (soundbar); 120(w) x 210(h) x 141(d)mm (surrounds); 204(w) x 400(h) x 414(d)mm (subwoofer) **WEIGHT:** 6.7kg (soundbar); 2kg (surrounds); 9.6kg (subwoofer)

FEATURES: Dolby Atmos in 5.1.4 configuration; Surround Sound Expansion Plus upmix modes; 4K passthrough on HDMI; network audio; Samsung Multiroom app and integration; wall-mounting; wireless subwoofer; wireless surround speakers; plug-and-play setup; LCD display

PARTNER WITH



SAMSUNG UE55KS9000: Marry the HW-K950 with one of Samsung's premium (and UHD Premium-certified) 4K TVs. This 55in model, available for around £2,000, is a good aesthetic match, and blessed with a bright, colour-rich performance

demo clips give a genuine spatial 3D effect with frankly outstanding positioning from a system with just three boxes and a sub. The cross-room pans of planes throughout the Japanese attack sequence in *Unbroken* on Blu-ray swing properly overhead as bullets whistle through and hit objects seemingly in all parts of the room. Punch up the volume and you might have to back down the subwoofer level a little to keep things in balance – as it gains volume a little quicker than the main speakers – yet overall, the HW-K950 grows in power and scale with increased volume, delivering delightful SPLs.

The Atmos effect wasn't overly sensitive of surround speaker position in my room, although giving them a little breathing space away from side walls resulted in a more convincing overhead effect. Comparing to my cinema room's 9.2.4 Atmos setup did reveal some shortcomings in the HW-K950, though. It didn't quite manage the fine detail, pin-point effects or front soundstage width of that system. But let's take a reality check here; my four in-ceiling speakers alone cost more than the complete HW-K950 and certainly were not plug-and-play...

Home cinema success

Samsung's investment and effort to realise not just another soundbar but to create something that stands out in a crowded market is a great success. It's way more expensive than most soundbar packages (although more affordable than Yamaha's YSP-5600), but offers way more performance than most soundbars, too. It's about as near as you can get to true home cinema sound without filling your room with boxes, cables and an AVR that needs a manual the size of the Birmingham telephone directory ■

3. Atmos upfiring speakers are mounted in both the soundbar and surround speakers

3



HCC VERDICT



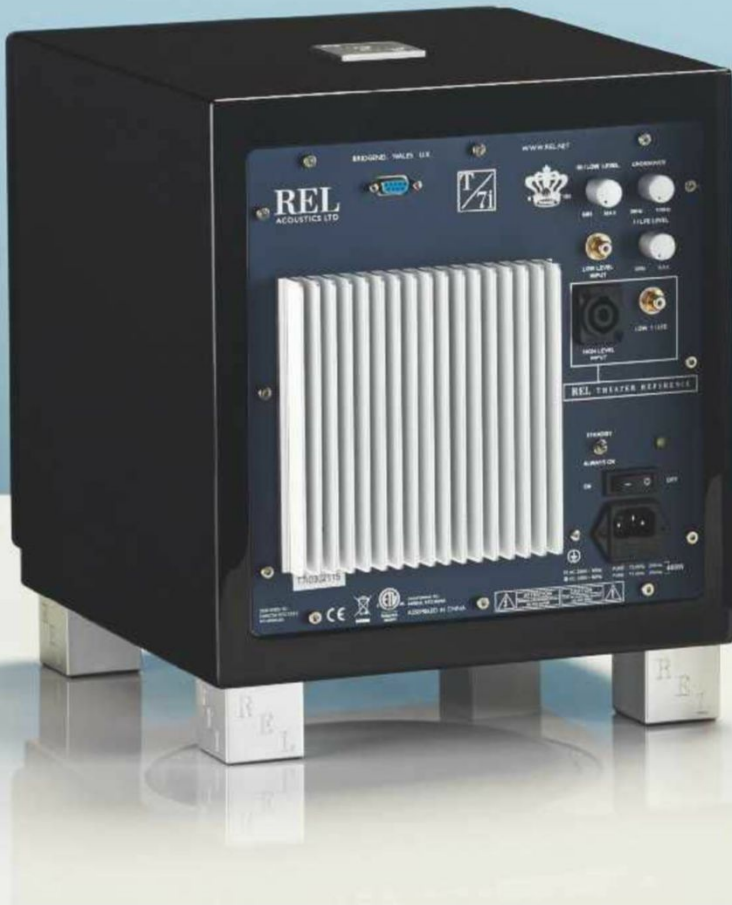
Samsung HW-K950

→ £1,300 → www.samsung.co.uk

WE SAY: More HDMI inputs and room EQ would have been nice, but that doesn't stop Samsung's premium soundbar system from being a genuine delight. Dynamic, immersive sonics



SERIE T/i



T/7i (left) shows proprietary Arrow™ zero compression wireless connector upper corner.
T/9i (right) features new Fiberall™ ultra-fast driver.

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Roku's got game

With a mature OS and extensive OTT channel support, Roku's premium UK media streamer is difficult to resist, says **Steve May** – although where's the Roku 4?



Headphone support is included on the Roku 3's remote control

THE MOST ACCOMPLISHED of all the Roku media players available in the UK, this refreshed iteration of the glossy black pebble combines wired and wireless connectivity with a dazzlingly-fast dual-core Broadcom chip. But is the lack of UHD support (which is actually offered by the Roku 4, on sale in the US but not over here) a reason to give this gadget a swerve now that the likes of Amazon's Fire TV have raised the resolution stakes when it comes to TV add-ons?

Familiar form

Cosmetically, the Roku 3 looks much like the Roku 2 and 720p Roku LT. The distinctive fabric tab remains a fashion *faux pas* and it's anonymous on your equipment rack beyond a tiny status LED. Connections include HDMI, USB and Ethernet. There's also a microSD storage expansion slot to increase the capacity of the player, which is capped at 512MB.

The stubby little Bluetooth remote control

has dedicated buttons for Netflix, Google Play, YouTube and the now defunct (D'oh!) Rdio music streaming service. It also has a motion sensor for use with casual games, of which there's plenty (*Angry Birds* and *Galaga* are welcome time-wasters).

The remote also has a 3.5mm jack for

headphones, but unfortunately the supplied earbuds are horrible, and audio quality is pretty poor even if you connect your own cans.

Roku has refined the user interface over the years, and setup is a breeze. You'll need a user account (if you have one from owning previous Roku units you can just add this device to your list), but then you'll be up and running in minutes. Graphically nothing much has changed. Everything still follows a basic grid pattern, which can look a bit clunky on larger TV displays.

If you haven't popped into the Roku Channel Store for a while you might be pleasantly surprised at the selection. There's a complete roster of main channel catch-up services (BBC iPlayer, ITV Hub, All 4, Demand 5), plus scads of curiosities, some of which are subscription based, others ad-supported (VOD aggregator OVguide being a newer example).

Image quality is generally very good. The Roku 3 can upscale to 1080p, which masks the native resolution of many of the services available. Premium OTT offerings like Netflix and Amazon Video are deliciously sharp and clean, provided you have a fast-enough broadband connection.

On the other hand, fire up *Teenagers from Outer Space* on Oh, The Horror! channel and the resulting stream looks like it has been mastered from an ex-rental VHS tape. But then that's half the fun of kooky low-rent channels, I'd argue.

The Roku 3 is also a good option if you need a media streamer to dip into non-

SPECIFICATIONS

UPSCALING: Yes. To 1080p

WI-FI: Yes. Dual-band

CONNECTIONS: 1 x HDMI output; 1 x USB input; Ethernet; microSD; headphone jack

WEB TV: Roku Channel Store includes Netflix, BBC iPlayer, ITV Hub, All 4, Demand 5, Vimeo, Crackle, Spotify, TuneIn radio and much more

FILE SUPPORT: MP4/MKV h.264; AAC; MP3; JPG; PNG

DIMENSIONS: 90(w) x 90(d) x 25(h)mm

WEIGHT: 99g

FEATURES: 512MB storage expandable by microSD; Bluetooth remote control; app control; Plex support

contract Now TV and the Sky Store (Sky is a shareholder in Roku), accessible with a Sky ID or Now TV account; both offer up a huge selection of movies and TV shows. Other apps worth downloading include Crunchyroll, Vimeo, DailyMotion, Spotify and TuneIn radio.

The device also transpires to be a great client for Plex users. Plex is a powerful media serving platform, but can suffer from odd player compatibility problems. I compared the Plex client here with that on Amazon's Fire TV and discovered better file compatibility. Downloads that just wouldn't unspool on the Amazon platform worked fine on the Roku. This could be significant for file hoarders.

Of course, with so much stuff you might wonder where to start. Thankfully, the latest Roku firmware update has introduced a comprehensive search function. Enter Movie, TV or Actor, and the device scans your service bouquet (Amazon, Google Play, Netflix and sundry other apps). Search for 'Star Trek', for instance, and you can elect to have any Trek content flag up in a customised feed. This is unique among streaming services.

Bullet-proof

Ostensibly expensive, but often available for less than its £100 list price, the Roku 3 should be considered a bullet-proof media player with an excellent feature roster. While the lack of 4K support makes it difficult to compare with Amazon's 4K Fire TV, the sheer breadth of content plus terrific usability make it a success. Easily recommended – at least until (and if) the Roku 4 makes the trip across the Atlantic ■

AV INFO

PRODUCT: Streaming media player/smart TV add-on

POSITION: The highest-spec Roku player outside the US

PEERS: Amazon Fire TV; Now TV box

HCC VERDICT



Roku 3

→ £100 → www.roku.com

WE SAY: This media streaming player uses a tried and tested OS, is blazingly fast, and has a great selection of apps. Not 4K, though



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SEASIDE SPIES

Brit secret agent comedy *Grimsby* explodes onto Blu-ray p97



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Panasonic impresses **John Archer** with the dramatic design and pretty pictures of its latest 4K TV

Panasonic has an art attack

With TV frames getting inexorably thinner, it's becoming harder and harder for TV brands to deliver truly distinctive designs. Yet Panasonic has certainly managed it with its new 58DX802: a 58in TV that arrives hanging between two metallic triangular 'legs', like a painting on an easel.

So unusual is the design that I guess it could prove divisive. Personally, though, I think it's rather clever, particularly the way it makes such a large bit of AV hardware feel light and lithe rather than an overpowering presence in your movie room. The only niggle is that if you want to sit it on furniture rather than the floor, said furniture will have to be at least as wide as the full width of the TV plus its legs.

The 58DX802's screen can be detached from its legs and hung on a wall if you'd prefer (using a provided bracket), though I don't envisage many of the TV's likely style-conscious buyers following this path.

Wall-hanging the screen also raises the practical question of where you put its soundbar speaker. Yes, that's right: in another left-field move Panasonic hasn't built any speakers into the 58DX802's main bodywork, choosing instead to ship the TV with an external soundbar designed to sit between the easel legs. And this hopes to be no half-baked audio add-on either; tucked inside its reasonably compact form are two tweeters, four mid-range drivers and six woofers. This too can be wall-mounted, but needs a wired connection to the TV.

It might have been nice given the design if the 58DX802 had used an external connections box to minimise cable spaghetti, in the style of Samsung's SUHD displays. That's not the case, although the Panasonic does feature a decent cable management system to tidy up its trailing wires. As expected, there are four HDMI inputs, three USB ports and an Ethernet port. The latter can, of course, be ignored in favour of integrated Wi-Fi if you'd prefer.

The 58DX802's smart features are provided through a TV-optimised version of the Firefox operating system. This continues to be one of the most attractive, easy to use and customisable operating systems around. My advice is, as always, to spend a few minutes optimising the home page for your needs when you first get the TV. Content apps are first-rate, with the 4K and HDR-enabled versions of both Netflix and Amazon on tap, plus the

catch-up TV apps for all the 'big four' UK broadcasters delivered in the user-friendly Freeview Play wrapper.

Getting the edge on imagery

The 58DX802's images are crafted via an edge LED lighting system with local dimming, and the 'Super Bright' panel is designed to deliver both enhanced brightness and a wider colour gamut than typical LCD screens. It's a set made for HDR material then (of the HDR 10 variety), while Panasonic's new Studio Master HCX video processing system (although not the '+' iteration found on the higher-end, direct-lit DX902 sets – see HCC #259) is on hand to try and ensure that pictures look just as their creators intended.

When it comes to those in-demand badges, the 58DX802's picture quality efforts bag it THX certification for standard dynamic range – THX doesn't currently certify HDR. At the same time, though, the TV doesn't have enough brightness and colour range to meet the specifications laid down by the UHD Alliance's Ultra HD Premium standard.

As it's the middle of Summer, I naturally decided to audition the 58DX802 with a film about ski-jumping. Given my Ultra HD Blu-ray copy of *Eddie the Eagle*, I found the set delivers mostly lovely pictures. This disc features some of the most effective use – in its subtlety – of wide colour and HDR technology seen to date, and its relatively gentle but accurate approach suits Panasonic's quest for accuracy. Whether it's the warm, 1980s tones of Eddie's home or the crisp, cool, glistening, sun- and snow-drenched slopes of his training camp, the 58DX802 makes it all look both exquisitely natural where colour tones are concerned and, when required, beautifully dynamic.

While the dynamic highlights deliver an HDR experience, they never look forced or over-dominant, and there's only slight evidence of detail clipping in the brightest areas. The bright skies above *Eddie the Eagle*'s ski slopes also

AV INFO

PRODUCT:
58in edge LED TV with native 4K resolution and HDR support

POSITION:
One step from the top of Panasonic's 2016 LCD ladder, below the DX902

PEERS:
Sony KD-65XD9305; Samsung 55KS9000

1. The set is also available as a 50in model

2. Panasonic calls the TV's unusual styling 'Freestyle Design'



SPECIFICATIONS

3D: Yes. Active **4K:** Yes. 3,840 x 2,160 **HDR:** Yes. HDR 10 **TUNER:** Yes. Freeview HD (Freeview Play); HD satellite **CONNECTIONS:** 4 x HDMI; 3 x USB; headphone output; Ethernet port; optical digital audio output; component video input; composite video input; CI slot **SOUND:** 40W **BRIGHTNESS (CLAIMED):** N/A **CONTRAST RATIO (CLAIMED):** N/A **DIMENSIONS (OFF STAND):** 1,290(w) x 753(h) x 36(d)mm **WEIGHT (OFF STAND):** 22.5kg

FEATURES: Built-in Wi-Fi; USB/DLNA multimedia playback; 4K Studio Master HCX processing engine; touchpad remote; VESA mount compatible; ambient sensor; Freestyle Design; Game Mode; Firefox TV smart system; Bluetooth

PARTNER WITH



PANASONIC DMP-UB900: The brand's debut Ultra HD Blu-ray deck (available for around £600) is an excellent all-rounder, adding assured CD playback to its 4K/HDR roster, plus plenty of user adjustments. Solid-feeling build, too.

3 reveal the strength of Panasonic's colour engine, as every tiny tonal nuance is delivered with almost immaculate subtlety, meaning you hardly ever see any of the striping (or 'posterisation') noise found to some extent on numerous other HDR TVs this year.

Overall image clarity is good. The fine details of the *Eddie the Eagle* Ultra HD platter (itself an upscale of a 2K master) come across with gorgeous precision, drawing you into the feel-good drama.

However, the pin-sharp feel ebbs away slightly during fast motion or rapid camera pans. There's a consistent trace of motion blur if you're not using any of the TV's

'The design is clever, making a largescreen TV seem airy and lithe rather than an over-dominant presence'

motion processing systems. The good news here is that the lowest setting of Panasonic's Intelligent Frame Creation system can tackle this blur reasonably effectively without making a hash of the picture.

Swapping the Ultra HD Blu-ray of *Eddie the Eagle* for the standard Full HD Blu-ray version, this designer screen continues to impress. Its pictures look pretty much immaculate when not being pushed hard by the extra luminance and colour demands of an HDR source, and the Studio Master HCX system does an accomplished job of upscaling HD pictures to 4K. Motion blur isn't given an unwanted boost. It's a set that leaves your BD collection in safe hands.

LED headache

While the Panasonic's pictures are exceptional for the vast majority of the time, they're not immune to backlight inconsistencies. This is a flaw that's causing headaches for almost every HDR-capable LCD TV this year, with rival OLED sets highlighting the limitations of LED illumination.

The difficulties LCD TVs have with putting light only where it's really needed on a screen – especially those lit

by edge-mounted LEDs – mean that when a very bright object appears against a darkened backdrop on the 58DX802 you can see sometimes quite defined 'blocks' of light spillage around it.

Furthermore, if the bright elements in a predominantly dark frame take over enough of the display, the whole light tone of the image can shift quite distractingly.

There's also more general greyness over dark scenes than there would ideally be. A counter to this is to run the 58DX802's adaptive backlight feature on its highest level of strength, but this can then lead to the image losing some of its lustre, and suffering more regularly with backlight instability and flickering. In fact, it's an interesting comparison to the Philips PUS7601 (see p36); that direct-lit model has more backlighting panache.

Serious sonics

Yet overall, the Panasonic 58DX802 deserves to have this review wrap up on a positive note. So let me stress that the times when its light control shortcomings are exposed are fairly rare (and barely a factor with non-HDR material). Also, the accompanying soundbar turns out to be a rather serious bit of audio kit. Its front-firing nature gives movie soundtracks a sense of immediacy and attack, and it has the finesse and musicality to handle the subtle spatial detailing in the *Eddie The Eagle* UHD BD and the bursts of late 1980s pop the film occasionally indulges. It's not a substitute for a separate speaker array, but it's a cut above the TV speaker norm.

And then there's the styling. Designer TVs certainly have a place in the market, and I'd suggest Panasonic's easel approach has more wow-factor than a curved TV. That it matches this with enjoyable visuals makes it even more of a success ■

3. All four of the DX802's HDMI inputs support playback of HDCP 2.2 protected video content

HCC VERDICT



Panasonic TX-58DX802

→ £1,600 → www.panasonic.co.uk

WE SAY: While it might be the 58DX802's flashy design that first catches your eye, its picture and sound quality are what will keep you coming back for more

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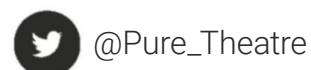
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Digital Copy

Mark Craven puts on his best 'I love Blu-ray' T-shirt to stick up for the ten-year-old format in the wake of news that early Ultra HD BD sales are far outpacing those of its predecessor

The Ultra HD Blu-ray format, launched during an era when streaming services are eating into physical media sales, has posted impressive retail figures that compare favourably to the first few months of Blu-ray, according to US industry mag *Home Media Magazine*.

The trade journal conducted research to show 228,000 UHD discs (from 45 titles) had been sold (presumably in the US) by the end of June, following the March launch. It noted that figures for Blu-ray sales for its first three months – back in 2006 – were a meagre 57,000.

The figures will no doubt boost the confidence of studios releasing content on the UHD BD format that the Ultra HD message is getting through to consumers, and that initial marketing and content selection has been successful. A relative paucity of playback hardware – there are only two 4K Blu-ray decks available – doesn't appear to have harmed early take up either, and with the August launch of the Microsoft Xbox One S – which will support playback of the next-gen discs – the industry will hope that the potential consumer base will grow.

Good news, then, for physical media fans? Undoubtedly, but I think the outcome that some online commentators have drawn from this news – that UHD Blu-ray is proving more successful than Blu-ray in its early phase – needs a bit of analysis.

What about HD DVD?

Ultra HD Blu-ray has enjoyed a fairly uncomplicated launch, in that it's the only 4K disc standard around. If you're a forward-thinking home cinema owner, you're going to buy it. Blu-ray, on the other hand, was launched into a market where a direct competitor – HD DVD – was already digging in (and digging in well, actually – the now defunct

format sold around 250,000 players during its first eight months). Making like-for-like comparisons between Ultra HD Blu-ray and Blu-ray while ignoring the HD format war that dragged back the latter certainly seems a bit daft

And beyond this, there are other factors that could actually account for what is being deemed a good take up. Region-coding, for example, which was present on Blu-ray but has thankfully been jettisoned from its 4K successor. So UK buyers (or anywhere in the world) can import Ultra HD Blu-rays discs from the US, grabbing the likes of *Deadpool* and *The Revenant* in advance of their local release. This, surely, plays into those sales figures.

Then there's the small matter of bundled copies. All Ultra HD titles come with a regular Blu-ray platter. Blu-rays, on the other hand, didn't then – and still often don't now – bundle a regular DVD. UHD releases are therefore a more tempting purchase. You can keep the 4K disc and give the 1080p version to your neighbour, or you could buy a release in advance of actually owning the playback hardware.

Hardware! That's another fly in the ointment. My memory may be failing me, but wasn't there only one standalone BD player available during the format's first three months (the Samsung BDP-1000)? It sold for \$1,000. The PS3 played BDs and was cheaper, but it was a games machine first and foremost.

My point – I do have one, I promise – is that the early success of Ultra HD Blu-ray owes much to the differences between it and its ancestor. The industry has generally got things right this time around, whereas the Blu-ray launch was a fiasco. Does this mean we can expect to see sales figures continuing to be four times higher? I'd be surprised ■

Have you got a UHD BD player? What's your verdict on the format? Let us know: email letters@homecinemachoice.com

Mark Craven would happily give his unwanted Blu-ray discs to his neighbours if he thought they had any way of actually playing them





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In The Mix

Jon Thompson believes if you really want to get a reference-grade image you should embrace pro technology and spend time – and money – calibrating. And it starts with colour cubes...

I AM ALWAYS on a mission for the perfect picture. As you can see from the Lumagen review (p48), the world of home cinema has moved on considerably from just tweaking your display. It's 2016 and the methodology now is to profile your set – and from that you can create a 3D colour cube, or a 3D LUT.

What does a colour cube do? It sees that this or that pixel should be a particular shade of red or blue or green or cyan or yellow or magenta. It then applies a correction to it to make that shade/tone display accurately. The correction has been calculated by the profile. This should give you a colour-perfect picture.

Okay, so what's a 'profile'? In some ways profiling your display is similar to how Dirac speaker/room optimisation software (as seen on the likes of Arcam's AVR850) works. Dirac creates a sonic profile of your room, applying an inverse to correct it to a desired specification (e.g. Dolby's X-Curve). Profiling your TV is the same for the picture – only the spec would be REC.709, P3 or even REC.2020.

Use your illusion

In the home cinema space, you have three major colour calibration players: Chroma Pure, Calman and Light Illusion (all Windows based). I'm not a fan of the first two – I find they have odd workflows – but Light Illusion is a gem of a find. The basic version is free; the 3D LUT home cinema version is a reasonable £450. You will need to also buy a colour probe. Luckily enough, the X-Rite i1 Display Pro OEM is very cheap, at £275, yet very accurate. Okay, you could buy a pricier probe, but really all you get is one that can do the job much faster.

Then you will need some hardware to implement the 3D LUT to your display. The Lumagen Radiance Pro would be my first choice as it handles 4K and has a level of futureproofing as well as all its other

functions. But you also have the Murideo Prisma (£850 approx) or the eeColor LUT (£300 approx).

All in, you can be using 3D LUT on your HD system for about £1,000.

So what does Light Illusion software do? It's a two-stage solution. First, it profiles your display. Light Illusion is capable of doing a full 21-point (21 x 21 x 21) profile. The Radiance Pro uses a 17 x 17 x 17 cube; the idea is you profile at a higher level than the display – using a 21 x 21 x 21 source will create a much more accurate 17 x 17 x 17 cube. Using the i1 Display Pro, it took about four hours to profile the display.

Once you've generated the profile, it then takes seconds to create the 3D colour cube. Then you upload it to the device (in my case the Radiance Pro). The colour science needed is serious maths – while all cubes when generated use some form of guestimation, this guess can be an informed prediction as opposed to a pure shot in the dark. I tested the software against some very expensive custom code I'm using on a film in post-production at the moment, and the outcome was almost identical.

And that's it. With the Lumagen between source and display, you are watching a picture as close to what was seen in the grading suite as possible. Is it worth the effort? Simple answer: yes. The picture has lost that 'video' look. Depending on what you're used to, it will either be a revolution or an evolution. It won't look too dark or too bright, too colourful or too dull.

Your local cinema is maybe making a hash of the picture and sound, but the original file is technically perfect. If your system is set up correctly, you will benefit from all the hard work that's gone into that. Seeing is believing. If you want the best you know what to do! ■

*Have you had your TV professionally calibrated?
Let us know: email letters@homecinemachoice.com*

When he's not in his screening room, **Jon Thompson** tweets about Hollywood gossip, movie-making and digital mastering at @johnnyfocal

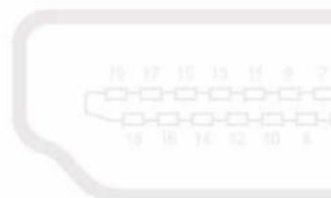




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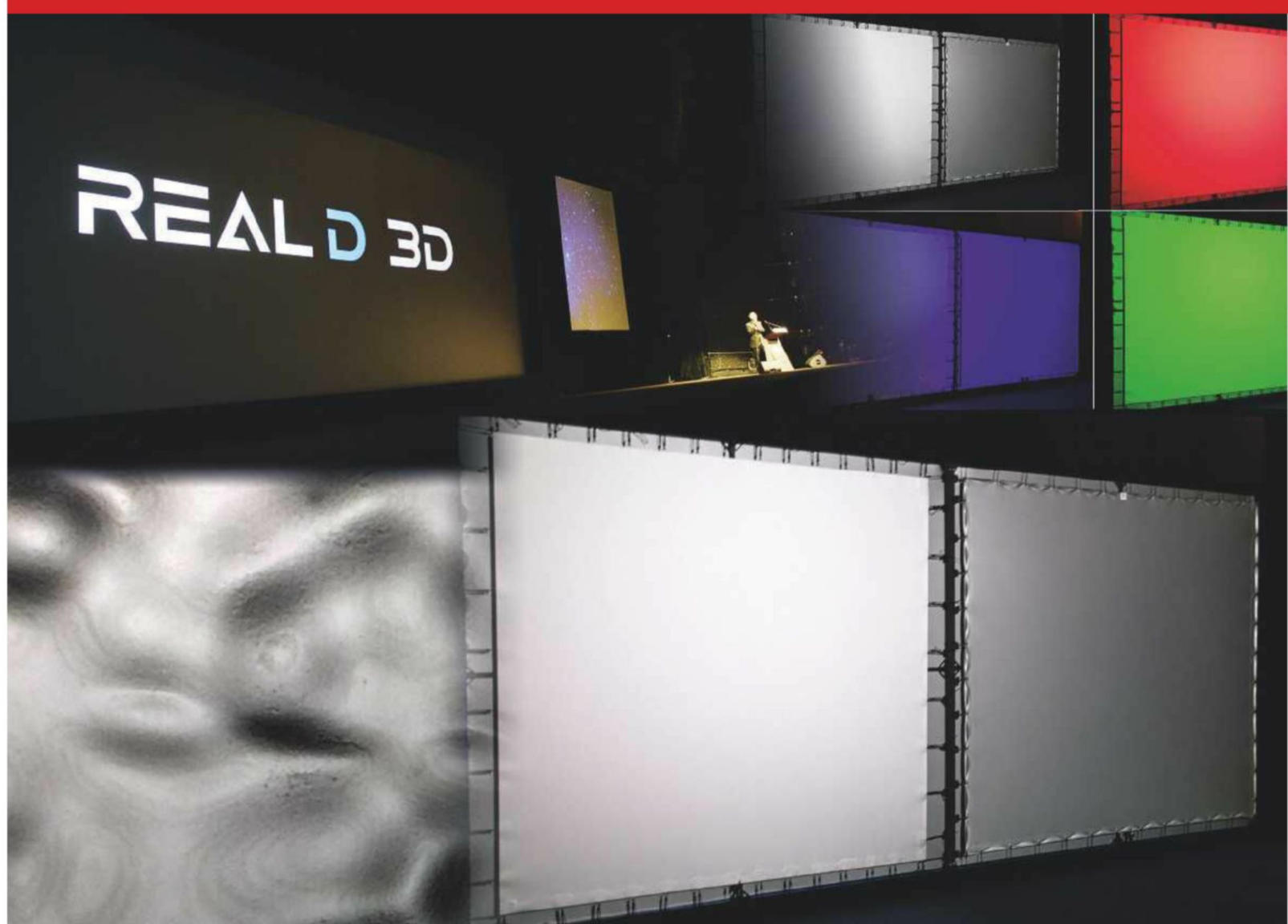
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MAKING THE CONNECTION





Reinventing the cinema screen

New technology from RealD hopes to make going to the cinema a lot better, says **John Archer**. Especially if you love 3D

Above: The 2016 CineEurope expo saw RealD demonstrate its Ultimate Screen technology, including side-by-side with a typical silver screen to showcase its colour punch and brightness

IN THE WORLD of home cinema we're used to technology advancing at breakneck speed. Strangely, though, the pace of change in the commercial cinemas that spawned our domestic obsession has historically been much, much slower.

And this is true when it comes to the delivery point of cinema pictures, the screen. In some ways the so-called 'silver screens' used in many cinemas for 3D don't differ all that much from the metallic paint screens used since the early 1900s, when people started to talk about 'stars of the silver screen'.

Yet cinema technology specialist RealD hopes to drag screens into the 21st century with its new, immodestly named 'Ultimate Screen' technology. And, having had a demo, I think it might be onto something.

The result of seven years of R&D, RealD's Ultimate Screen moves away from the traditional technique of essentially spraying metallic paint onto a 3D screen – an approach which can result in an uneven, flaky surface that can cause both light loss and the depolarisation associated with 3D ghosting noise.



Instead, it uses an engineered reflective surface that drastically reduces its unevenness.

That's actually just the start. The Ultimate Screen's structure has enabled RealD to reduce the size of perforations used for acoustic transparency. At just 150 microns across, they're almost invisible to the naked eye. Reducing their sizes so much enhances brightness, as there's more physical screen for light to bounce off, as well as limiting the speckling effect projectors can cause on traditional screens. This results in a smoother 'finish' to the picture that RealD says is suited to today's increasing use of high-resolution digital photography versus relatively grainy celluloid.

RealD even mounts the Ultimate Screen with small motorised 'exciters' pressed against it (out of sight of viewers, obviously...) that constantly vibrate the screen to further reduce the speckling effect.

And if all this didn't already sound exciting enough, the screen's smoother finish and smaller perforations increase image sharpness.

Made for 3D

According to RealD, the Ultimate Screen halves the ghosting you might expect to see when watching a 3D film, while also increasing brightness by a phenomenal 85 per cent. While this counters the traditional dimness of 3D images, the company is

keen to stress that it's not just a 3D technology. It's aimed to improve 2D movie viewing, too – a boon for cinema chains.

One concern about such brightness is that it may compromise contrast. However, RealD claims the 3.0-gain screen it currently offers at a 330in size can deliver a contrast ratio of 1,000:1 versus the mere 100:1 possible with typical silver screens. It's also available in a 2.2-gain 240in version.

Michael Lewis, RealD's CEO, was in attendance at the CineEurope expo in Barcelona, where the company was inviting the world's tech trade to gawp at its new concoction. 'Our R&D team continuously and relentlessly looks to invent new technologies that get the filmmaker's vision on the screen in the most dynamic and realistic way,' says Lewis. 'That's how and why we created the Ultimate Screen.'

I had the opportunity in Barcelona to see the Ultimate Screen in action in both demo room and full cinema conditions. The results were spectacular.

'CineEurope used a 330in Ultimate Screen in its main auditorium – images were mindblowing'

In the first room, RealD was projecting onto a section of Ultimate Screen side-by-side with a section of traditional silver screen. Initial demo material comprised red, green and blue colour washes. This proved simple but effective – in every case the extra brightness, uniformity, 'pop', and volume of the colours on the Ultimate Screen was clear. Shifting to a 3D *Jurassic World* clip, contrasts between the two screens were even more obvious. The 3D image on the new model was brighter, crisper, more dynamic and completely devoid of the rival screen's ghosting.

The most eye-catching demo, though, featured the *Life of Pi* in 2D. During the beautiful shots of Pi's boat, colours from the red paint of the boat to the blue seas and the fur of the tiger appeared richer and brighter. Skies above the boat were smoother and less grainy/speckly. The edges of objects in the image seemed more defined. Add all these improvements together and you get another stunning benefit: a 2D image with so much more depth that it almost looks 3D.

Shifting to a more 'commercial' environment, CineEurope was using a 330in Ultimate Screen in its main auditorium. This was fed images from Barco's flagship laser projector, the DP4K-60L; pictures were mindblowing. Various film clips from attending studios had me immersed to an almost scary degree, and dark scenes delivered a convincing sense of black level despite the screen's brightness skills.

If you want to experience the Ultimate Screen for yourself, there are currently only four commercial installs around the world: one at the Wanda in Beijing, one at AMC Burbank, one at Cinemark Boulder, and one UK option: the Surrey Quays Odeon in London. Given the performance it delivers, though, together with RealD's standing within the industry, I expect more will be installed. And maybe one day the tech will filter down to high-end domestic setups... ■

3D RIP? Nope

Five big 3D movies coming to cinemas this year...

Suicide Squad

The latest DC Comics ensemble piece brings together Harley Quinn, Deadshot, Joker, Boomerang, Killer Croc, El Diablo and Rick Flag... Need we say more?

August 5

Fabulous Beasts and Where To Find Them



J. K. Rowling delivers her first original screenplay: a spin-off/prequel to her somewhat popular *Harry Potter* series. Add the best *Harry Potter* director, David Yates, and box office gold surely awaits.

November 18

Trolls

Dreamworks animation about colourful trolls featuring voicework and music from Justin Timberlake, plus stunning computer-generated visuals. Early buzz suggests it could be the sleeper hit of the year.

October 21

Rogue One: A Star Wars Story

Once upon a time in a galaxy far, far away, Disney realised it would probably not do its profits any harm to make an apparently grittier, darker spin-off movie based on the *Star Wars* universe... And 3D space battles always look great. Fact.

December 16

Assassin's Creed

Cinema's record for turning video games into films isn't the best. But the presence of Michael Fassbender in the lead role and the prospect of a time-jumping plot and spectacular visuals could make this the exception that proves the rule.

December 26

How to... Embrace your hi-fi side

You invested in a home cinema setup because you love watching movies – but are you also looking for a quality music system? Audio buff **David Vivian** discusses where the two passions converge, and where it often pays to split them in two

IT SHOULD ALL be so easy and in theory, of course, it is. Don't let anyone tell you your home cinema system can't make a reasonable fist of playing music. As you've no doubt discovered, it can, and it's an interesting experience. Even if it means putting a plain old CD into the disc drawer of your 4K Blu-ray player, processing protocols in your AV receiver will purr into action to construct a 360-degree soundscape that will transport you back, possibly kicking and screaming, to a time of Quadrophonic sound, lava lamps, plasma balls, cheesecloth shirts and Tangerine Dream. Perhaps.

Alternatively, you can get your AV to output in 2.1, or straight stereo if you'd rather not have your subwoofer's more visceral charms. You might even be amazed at how good it sounds like this. In recent years, speaker packages from the likes of Monitor Audio, KEF, B&W, Tannoy, Wharfedale and Q Acoustics (to name just a few) have become notably more adept at marrying the disparate requirements of movies and music and the main fronts, whether floorstanding or standmount, will often have been those chosen to go in purist two-channel systems. The same goes for AV receivers, too – movie machines can also be musically gifted. Or splash out on a sophisticated AV pre-amp with your own choice of accompanying power amps and network/hi-res/old school analogue peripherals and the potential for building one almighty, do-it-all entertainment behemoth grows stronger still.

So what's the problem? Partly, it's psychological. Systems with a singular, dedicated purpose – a design direction that allows them to do one thing supremely well – tend to be sexier than those burdened with multiple tasks. Sexier and better at the job in hand.

It boils down to this. A good home cinema system will have been optimised for impact, volume, drama, image steering, seismic bass and dialogue intelligibility. A good high-fidelity music system will almost certainly be two-channel, pared down to the bare essentials, located in a room with just the right amount of soft furnishings and no additional loudspeakers, have had its cables and mains



1. Dynaudio's Xeo 2 – an active, wireless speaker with a premium performance

blocks chosen with inordinate care and its major components optimised for tonality, transparency and temporal accuracy – all necessary to get you humming a tune, breaking out the air guitar and, all in all, being a slave to the rhythm. Naturally, there is some overlap between the two but, for me, the home cinema system that can deliver the best of all worlds is a mythical beast.

Divide and conquer

So what to do? Well, ideally, you could keep your home cinema rig intact, doing what it does best, and save its

musical chops for parties that end with a noise abatement order. Then, you simply take over a decently-sized spare room that you can dedicate to the enjoyment of music pure and simple, get yourself to a reputable hi-fi retailer, buy a conventional component system and fill your boots.

I understand this most likely isn't possible, particularly the 'decently-sized spare room' part. It's time, then, to both look at bolstering your AV arsenal and making use of some remarkable, space-saving products coming out of the hi-fi world that'll give you audiophilic loveliness wherever you want.

I'm going to outline four approaches, with some very specific recommendations culled from my reviewing activities for *HCC*'s sister magazine *Hi-Fi Choice*. If you're greedy, you might even want to consider all of them.

Get personal

You don't get much closer to having the audio world in your pocket than a personal digital high-resolution audio player (which some people insist on calling a 'DAP' for short). A fully-featured model such as the £500 Pioneer XDP-100R pulls together pocketable portability, app-rich smartphone-esque functionality, cutting-edge DAC design and beefed-up headphone driving power. Although small, its quality reach and versatility are massive. Imagine a Bluetooth- and Wi-Fi-equipped super-source capable of better-than-CD sound quality, streaming, web browsing, wireless connectivity and, with memory card slots suitably filled, serious mass data storage that will fit in the palm of your hand. This allows you to forget about bulky network boxes and NAS drives. Teamed with a suitably talented pair of headphones, it could well be the only piece of hi-fi you'll ever need.

As for the headphones, there are plenty of options. One that recently blew me away, in a six-way showdown, was Meze Headphones' 99 Classics (£300). Designed and made in Romania, they're simply more exciting, charming and enjoyable than headphones usually sound and have buffed wood high-end looks and build to boot. With the Pioneer player, it's a match made in hi-res heaven – and one that you don't need to be chained to your cinema room sofa to enjoy.

Get wireless

All right, this requires a little more space, but not much. Two speakers (small, cute, wall- or stand- mountable), no wires. That's it. You might think wireless speakers and their ability to multiply all around the house now rock the hi-fi world as there are so many to choose from. But, until relatively recently, they weren't exactly welcomed with open arms by the audiophile community, their actual sound quality failing to live up to the marketing-generated hype. That's changed with the advent of excellent-sounding models from the likes of Naim, Geneva, Sonos and Denon.

But my favourite wireless speaker package by far comes from Danish audio maestros Dynaudio. It's called the Xeo 2 and costs £1,000. Dynaudio bills it as its entry-level high-end speaker and, ergo, the world's first high-end wireless speaker, too. It's a true active design with a generous 65W of pulse width-modulated Class D amplification assigned to each driver and electronic crossovers to divide up the workload. The brand dubs the approach 'Pure Path Amplification', which just means that the analogue signals fed to the Xeo 2's phono and 3.5mm

2



3



2. Get a portable digital audio player like Pioneer's XDP-100R to enjoy hi-fi on the move

3. You'll need headphones too, of course. Meze's 99 Classics use walnut-backed earcups and 40mm transducers

inputs are immediately digitised and, along with the optical digital audio and Bluetooth inputs, stay that way until the last possible moment. But not until they've been treated to something of a digital neck rub by the active DSP filters, time-coherent phase linear FIR (fine impulse response) filters and Adaptive Bass tech – the latter optimising bass output against amplifier load to give deeper and more even lower frequencies than you might expect from such a *bijou* box, flat down to a remarkable 40Hz according to Dynaudio.

Bottom line is it's easily the best Bluetooth speaker I've ever heard – genuine, sonic gold. Stream to it from your PC, hook up a CD player, partner it with the aforementioned Pioneer XDP-100R DAP... you're in the sweet-smelling hi-fi highlands once again.

Get professional

How about a slice of stylish but very pukka recording studio hardware that's suitable for installation on any available shelving unit? On first contact, the dinosaur-sized eggs with drive units that part make up the £2,000 MunroSonic EGG150 nearfield monitoring system seem more style-over-substance than serious speakers. Nothing could be further from the truth, however. There's a good chance some of the music you'll listen to in your new music-centric habitat will have been mixed using them as, so far, recording studio ➤



control rooms have been their natural home, latterly sat on cute rubber 'egg nests' introduced to facilitate a degree of insulation and multi-axial pin-point positioning.

The brainchild of acoustics whizz and studio monitor designer Andy Munro, who had the idea to develop a new speaker system based on 'egg geometry', the principal objective is to minimise the diffraction and internal resonance issues common among conventional box-shaped monitors. Featuring custom-matched amps and active crossovers packed away in a full-width separate control unit rather than inside the speaker enclosures (removing direct interference from vibration), the system has found favour with the pro community. It will with you, too, as it has with me. It's my small-room reference system. Uncompromising transparency and sublime musicality is a coalition that works wonders with all types of music. Tasty, as all eggs should be.

Get on trend

Nothing is hipper in the hi-fi world right now than vinyl. The elderly analogue format, supposedly consigned to the scrapheap by first CDs and then MP3 players, has come back with something of a bang. Not only can you buy vinyl records online and in the likes of HMV, you can also pick them up in Sainsbury's. There's never been a better time to revisit your childhood.

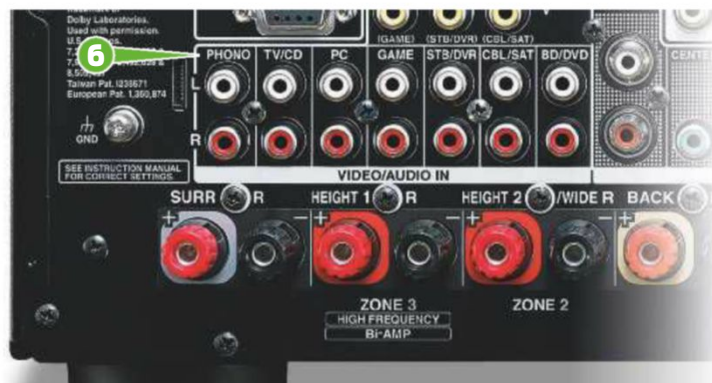
You have an AV receiver, so can you just connect a turntable, like any other analogue or digital source,

and start grooving? Not necessarily. Most likely, the weak electrical output signal generated by a turntable needs to be boosted to line-level strength, and undergo a process known as RIAA (Recording Industry Association of America) equalization, before your receiver can do anything with it. I say most likely, as while older AV receivers typically built in the required phono pre-amp, many modern designs, particularly those not at the high-end, don't.

If this is the case, you need to either invest in a turntable with a phono pre-amp built in, or an external phono pre-amp to run between the two. Thankfully there are numerous products available.

When it comes to turntables, while you can spend thousands on futuristic-looking audiophile slabs, there are entry-level options that will suit the fledgling vinyl fan. For instance, Pro-Ject's sub-£200 Elemental strives to be plug-and-play courtesy of its pre-installed cartridge and adjusted counterweight. And, if you go for a turntable sans pre-amp, Pro-Ject, as well as other phono specialists such as Rega and Musical Fidelity, all sell external hardware for less than £200.

Perhaps the most intriguing vinyl option right now is Sony's PS-HX500. This deck, which builds in a pre-amp, can hook up to your PC via a USB output to enable real-time vinyl ripping in hi-res DSD and WAV formats. The idea being that you can both listen to your platters in all their analogue glory, and play them back in premium quality through your digital gear ■



TOP TIP

PURE THOUGHTS:

Many AVRs have a dedicated audio mode – often called Pure Audio or Direct – that switches off video circuitry, signal processing, bass management, etc. Try using this mode with stereo sources

4. The stylish MunroSonic EGG150 system has pro-audio monitoring heritage

5. With Sony's PS-HX500 deck, you can rip your vinyl in hi-res digital formats

6. An AVR with an in-built phono pre-amp will have a dedicated 'phono' input lurking amongst its connections

DO IT!

COST:

As with your home cinema setup, how much you choose to spend on hi-fi kit will be determined by your budget. And, as with home cinema, always get demos of potential purchases if possible. Try before you buy!

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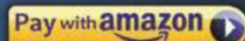
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Feedback

Got an axe to grind? Need to comment on current technology? Want to share your knowledge with our readers? **Team HCC** is here to help

Backing up the Beeb

In response to Mark Craven's Digital Copy column in *HCC* #261, I believe that the BBC offers great value for money and that politicians should stop messing around with it. It's the envy of many foreign countries and it's high time we acknowledged it as the great service provider and innovator it really is.

Martin Cairney, Airdrie

Agree totally with Mark Craven on the BBC R&D value that most of Joe Public does not appreciate. It annoys me when people object to paying a few pence a day for a TV licence when they fork out tens of pounds for BT Sport and Sky.

Ian King

After reading Mark Craven's Digital Copy article in *HCC* #261 I felt I had to write regarding other things that Auntie Beeb has brought us. First with Nicam stereo sound, colour TV, live 3D (I recorded all of the opening and closing of the 2012 Olympics in 3D on my Panny DMR-BWT800, which I then put on Blu-ray) and, of course, 5.1 surround sound on many of the HD films that it shows.



The BBC Philharmonic: another bit of your licence fee

However, the main thing that Mark did not mention was the BBC's orchestras and choral groups that nearly always tend to be forgotten when discussing BBC finances – BBC Symphony Orchestra, Philharmonic, Concert, National Orchestra of Wales and Scottish Symphony Orchestra, and the BBC Singers, Symphony Chorus and the National Chorus of Wales. Plus many national and local radio

stations. So you see that the £3 a week that Mark mentioned is spread out a lot and not just on the TV channels.

Richard Hibberd, Wilts.

Mark Craven replies: Thanks Martin, Ian and Richard. Good to see that some *HCC* readers share my love for the BBC and all that it does.

Where are the smaller TVs?

Hi, I'm looking to buy a TV at around the 48-50in size but when I look at your Select gear guide I see a 65in TV at the top spot. What other screen sizes are available in this model and likewise with the others?

Dean Smith

Mark Craven replies: Looking at the top of this issue's updated list, there is also a 58in version of the Panasonic DX902, no smaller models of the Sony XD94 (it's a 75in flagship) and 55in LG OLED C6, and a 49in version of Samsung's KS9000. So, as you can see, not all brands are catering to those seeking smaller sets with their top-end ranges.

Do consider the 49in Samsung KS9000, then, and take a look at 50in models in Panasonic's DX802 (see p68 where we review the 58in set) and DX750 lines. And we'll be looking at more 4K TVs in various sizes in a roundup next issue.



That said, I'm eager to hear from the Beeb about its plan for 4K broadcasts – the recent announcement from Sky has got my UHD senses tingling. Hopefully now HDR standards have been finalised (see p9) we won't have to wait too long.

Help me with my 4K TV!

Hi. As an avid reader of your magazine I thought I knew a bit about 4K so after much deliberation I duly set out and bought my 4K setup: a Sony XD85 75in HDR TV, a Yamaha RX-A1050 receiver and the new Panasonic UB900 UHD Blu-ray player.

Whilst extremely satisfied with the setup, as soon as I insert a 4K Blu-ray, I have an onscreen message saying that the TV is not set up for 4K – albeit it still plays the films.

The picture quality is extremely good but as I am not a pro I cannot determine if the message is correct or if I am in fact watching 4K. I ensured that the Yamaha is HDCP 2.2 so I cannot understand the message.

Having read David Blench's letter in the latest edition of the magazine, I thought he was having the same issue so I dug out the Sony TV manual looking for the magical HDMI (MHL) input but to no avail as HDMI ports 1-4 are all HDCP 2.2 on the Sony TV.

My system is plugged into HDMI 1 so I am at a loss as to what the issue is, if there is indeed one. My retailer – Superfi in Derby – at first suggested that I needed to upgrade my HDMI leads, as there are only certain ones that will allow 4K – and, of course, happen to be conveniently expensive. However, I have not seen one article to this effect in your publication.

They subsequently changed their minds on this and have confirmed that I am getting 4K despite the error message and that a future update on the Panasonic will make the message go away as it doesn't recognise the TV or the receiver.

Steve Dickinson

Steve May replies: Hi Steve. Hopefully we can help. We haven't tested the XD85, but have tested the XD93/94 models, and the experience should be similar.

What's important, is that you manually assign the HDMI input. You need to set HDMI on the Sony TV to 'Enhanced'. Here's the advice from Sony's support website:

1. Press the HOME button, then select [Settings] – [External inputs] – [HDMI signal format] – [Enhanced Format]. So, hook up the Panny player to an HDMI input (say, HDMI 1) and then set that input to Enhanced. We think this may resolve your issue. Don't do this for all the inputs that, we assume, may be connected to non-4K sources.

Regarding the HDMI cable, we're not sure why the advice you received was to buy a new one. For 4K and HDR video you simply need a

★ Star Letter...

I miss the glory days of disc packaging

I seldom reply to magazine articles but Steve May's thoughts on film packaging [AV Avenger, HCC #261] caught my attention, resulting in a nostalgia trip through my collection of different formats.

Like Steve I returned to my LaserDisc collection and my all-time favourite in terms of presentation and packaging is the 50th Anniversary Edition of *It's a Wonderful Life*. It contains the soundtrack CD, poster, six 10x8 scene photographs, a letter from Frank Capra Jr and, of course, twin LaserDiscs. This is just one example of the many in this format where attention was paid to 'special editions' which, unfortunately, was not repeated as time progressed.

Remember VHS? This format is still up and running in my household with my favourite 'tape' (this may need explaining to younger readers...) being *Kate Bush: Live at the Hammersmith Odeon*, which contains a CD of the 1979 concert. Although I've not actually 'seen it' as the VHS is still sealed!

Looking through my DVD selection I struggle to find anything of notable mention, with the exception being the metal-case issue of *Highlander*, which includes Queen's soundtrack CD. I'm so impressed with this I've actually bought three copies along the way.

Moving onto Blu-ray, special editions worth a mention are even more hard to find. The 20th Anniversary US issue (region-free) of *National Lampoon's Christmas Vacation* comes in a tin with bits and bobs including a replica reindeer egg nog glass.

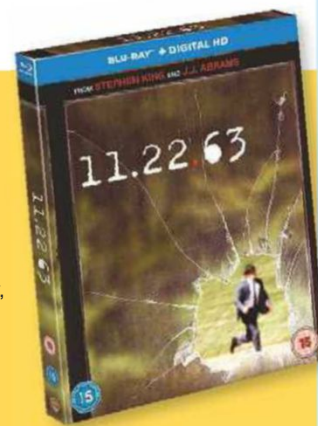
Whilst I do not consider myself a gamer, I have been attracted to many, many special edition games over the years. This industry upholds the 'special' feeling where appropriate, with releases including stickers, USB drives, keyrings, replica toy cars, cash tins, CDs, etc. It's a shame the film industry does not show the same interest.

Perhaps as consumers we are to blame? Maybe a 4K Blu-ray is enough? If I'm honest Steelbook editions, etc, become a bit of a nuisance in terms of storage as they take up valuable shelf space and usually the tin ends up in the loft – next to the box of LaserDiscs and LPs!

Steve Spill

Mark Craven replies: Totally agree on the troubles of housing special edition releases. When you have a tidy-looking disc shelf, finding a spot for the likes of the Hellraiser Lament Configuration cube-shaped boxset becomes a pain. And there have been some good Blu-ray special editions – the *Alien Anthology* bursting egg springs to mind.

Star letter-writer Steve grabs the acclaimed TV drama *11.22.63* on Blu-ray. Produced by J.J. Abrams and based on a novel by Stephen King, the series follows a teacher travelling back in time to try and prevent the assassination of JFK. *11.22.63* is available now on Digital HD, and from August 15 on Blu-ray and DVD, courtesy of Warner Bros. Home Entertainment.



High Speed HDMI cable that supports 18 Gbps, which have been around for a good time and you were probably already using, particularly as one is included in the box with the Panasonic Ultra HD Blu-ray player. And if you need to buy a new one, it needn't be expensive, either.

Do I need to fear Dolby Vision?

I have just read your article on p28 of the most recent issue of your magazine [HCC #262] about Dolby Vision vs HDR and the possibility of another format war. I've recently purchased the Panasonic TX-58DX902 TV plus the DMP-UB900 Ultra HD Blu-ray player.

I thought your article was extremely interesting. My question is: are we heading for another format war like HD DVD vs Blu-ray? I really thought that with the amount of time it has taken for Ultra HD Blu-ray to make it to

the mainstream they could have sorted out the specs before launching. Instead we might end up with two completely different versions of HDR – Dolby Vision 12-bit or HDR 10 10-bit. Is this a case of *déjà vu* all over again? I, for one, will not be amused if in a year's time what I bought this year will become obsolete if Dolby Vision becomes the Ultra HD standard for HDR.

My next question is about Denon and Onkyo. What plans do these brands have for 11.2 surround AV receivers that do not require a separate stereo amp to power 7.1.4 Atmos? Daniel

Mark Craven replies: First, the AVRs. Onkyo already sells the TX-NR3030, which is 11-channel with Dolby Atmos (but not DTS:X) support. Only one of its HDMI inputs will take 4K HDCP 2.2-protected content. I imagine an upgraded replacement model will come soon. ➤

Denon has confirmed its AVR-X6300H, which will launch later this year. This potent 11-channel model will playback Atmos and DTS:X soundmixes, plus Auro-3D if you pay for an upgrade. See p20 for more.

As for Dolby Vision and HDR 10, I don't think an enthusiasm-sapping format war is really going to happen, as I did stress in the feature. HDR 10 is the mandatory HDR part of the Ultra HD Blu-ray specification, while Dolby Vision is an optional extra. So, any Ultra HD disc with HDR must have an HDR 10 version. Dolby Vision, when it arrives on UHD disc (and it still hasn't been confirmed) will therefore be a premium flavour but won't make any kit obsolete.

From apes to aliens

Hi – here's my list of Top 10 films!

The Towering Inferno; *King Kong* (1933); *The Shawshank Redemption*; *Lord of the Rings* Trilogy (*Return of the King* if only one is allowed!); *Titanic* (1997); *Schindler's List*; *Gone With the Wind*; *The Railway Children*; *Whisper of the Heart*; and *Alien*.
Aisling

Anton van Beek replies: Thanks Aisling. Reading your list is a great reminder that there are a lot of catalogue movies I'm desperate to see get a 4K disc release!



Frankly my dear, we'd like a 4K release of *Gone With the Wind*

SACD matters to me!

I read with interest the comments of reader Romualds Pizans in your last issue about SACD and DVD-Audio formats, and whether HD DVD should be substituted for them in mid-range and high-end Blu-ray players.

I bought an Oppo BD deck precisely because I wanted to play my BD/DVD discs and my large SACD and DVD-A collection. There are a very large number of SACDs available to buy, numbering in the thousands (a large majority classical), but you won't buy them at HMV stores whose stock of CDs is pretty dismal. I'd suggest visiting HRAudio.net for all the latest info on SACD releases, plus

Blu-ray audio and DVD-A titles. There's a steady stream of new discs and this resource is valuable to me and others. And looking ahead, any replacement for my Oppo will need to be 'universal', and play these formats that so many people wrongly think have expired.

Rob Cawthorne

Contact us...

Write to HCC, AV Tech Media Ltd, Suite 25, Eden House, Enterprise Way, Edenbridge, Kent, TN8 6HF, or email us at letters@homecinemachoice.com. Please note: we cannot guarantee to print/answer all the letters we receive. Sorry.

WIN! Great Blu-rays up for grabs...

Just email your answer to Competitions@homecinemachoice.com to be in with a chance to win



The Divergent Series: Allegiant

The third instalment in the *Divergent* series of dystopian science-fiction blockbusters is now available to own on Digital HD, Blu-ray and

DVD thanks to Entertainment One.

If you fancy winning one of five *Allegiant* Blu-rays, answer this teaser correctly...

Question:

Which actress plays the lead character Tris in the *Divergent* franchise?

Answer:

A) Jennifer Lawrence B) Kristen Stewart
C) Shailene Woodley

Email your answer with '*Allegiant*' as the subject heading – and don't forget to include your postal address!



Midnight Special

This acclaimed sci-fi thriller stars Michael Shannon as the father of a boy with supernatural abilities, on the run from the FBI and a religious cult. *Midnight Special* is available now on

Digital HD, followed by Blu-ray and DVD from August 8, courtesy of Entertainment One. To celebrate, we've five Blu-rays to give away.

Question:

Midnight Special actor Adam Driver also starred in which 2015 sci-fi smash?

Answer:

A) *Jurassic World* B) *Terminator: Genisys*
C) *Star Wars: The Force Awakens*

Email your answer with '*Midnight Special*' as the subject heading – and don't forget to include your postal address!



Batman: The Killing Joke

Take a trip into the dark heart of insanity with this animated adaptation of the acclaimed graphic novel. *Batman: The Killing Joke* is out now on EST,

followed by BD and DVD from August 8.

Thanks to Warner Bros. Home Entertainment, we've five Blu-rays up for grabs.

Question:

Which of the following actors voices The Joker in *Batman: The Killing Joke*?

Answer:

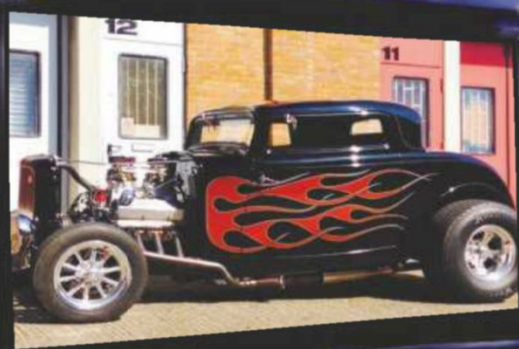
A) Mark Hamill B) Jack Nicholson
C) Jared Leto

Email your answer with '*Killing Joke*' as the subject heading – and don't forget to include your postal address!

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Certified: AV-Holic!

When HCC reader **Ed** realised his new-build garage had become a dumping ground for rubbish, he decided it would be better used as a home cinema space instead. With the help of some professional AV gurus, he's now enjoying hi-def, surround sound heaven.



The room uses a fixed-frame 108in projector screen



Welcome to the AV-Holics Hall of Fame! Introduce yourself...

Hi, I'm Ed Partridge. I'm 42 years old and work in banking.

How long have you been into home cinema, and what was the first setup you had?

I bought a 36in Sony TV in 1999 that cost around £2,000 and ever since then I have been hooked on getting the best possible image, as large as possible, to replicate that cinema experience.

I then bought my first projector in 2006 – an Infocus model with a foldup screen –

and a KEF 'eggs' 5.1 speaker setup. After four years with the Infocus projector I sold it second-hand and bought an Optoma HD25 with a GrandView projector screen. The difference with this setup compared to the Infocus was night and day.

This arrangement was in our lounge, which was not ideal. Luckily, when we extended our house we built a second lounge and integral garage.

Why did you decide to have the garage turned into a cinema room?

Good question! Our car would not fit in the garage and it was filling up with rubbish. So after 12 months of slowly wearing down my wife, Clare, she agreed that I could turn the room into a cinema. To be honest, she

thought the project was a waste of money at this point and that the room was rather an extravagant idea!

I always wanted a dedicated space so I could watch films/play games whenever and sold the idea to her that the room would be used for the whole family.

Did you use a professional company for the install or is this a D.I.Y. project?

I used Pure Home Technology (www.purehometechnology.co.uk), based in Winchester. When I commissioned them to design the room I thought I had a pretty good idea about hardware and setups, etc, but their knowledge and calibration proved invaluable. I also used the same local builder based in Ringwood (Porteus Construction

– www.porteusconstruction.co.uk), that had originally built our extension, to fit the stud walls and treat the room with acoustic plasterboard and insulation on the walls and ceiling.

How big is the cinema room?

It's roughly five metres long by three metres wide.

What kit are you using at the moment?

I have an Epson EH-TW9200W Full HD projector with a 108in Projecta acoustically transparent screen. For sound there's

'I'm keen to see a 4K projector with a native source to understand whether an upgrade would be worthwhile'

a Yamaha RX-V674 AV receiver, three KEFci4100QLB in-wall speakers mounted behind the PJ screen, four KEF T301 slim on-wall speakers and a Sonance subwoofer. For movies and console games I'm using a

Pioneer BDP-LX58 Blu-ray player and an Xbox One. Additional items are a Control4 HC250 system controller, operated through my smartphone or an iPad, a Control4 wall dimmer, PHT Acoustic panels, and Rako lighting including a 10m LED strip.

What do you love the most about having a dedicated cinema room?

It's really what all the HCC readers say: it's a real sense of occasion when you watch a film, and adds to the enjoyment.

How do you rate the performance of your system?

The Epson EH-TW9200W projector is just awesome when coupled to my Pioneer BDP-LX58 Blu-ray player.

I went to the cinema for the first time in years recently and was disappointed with the picture and sound quality – home audio-visual kit has come on so much. It's really quite amazing the quality of image and sound now available.

Roughly how much have you spent on the room?

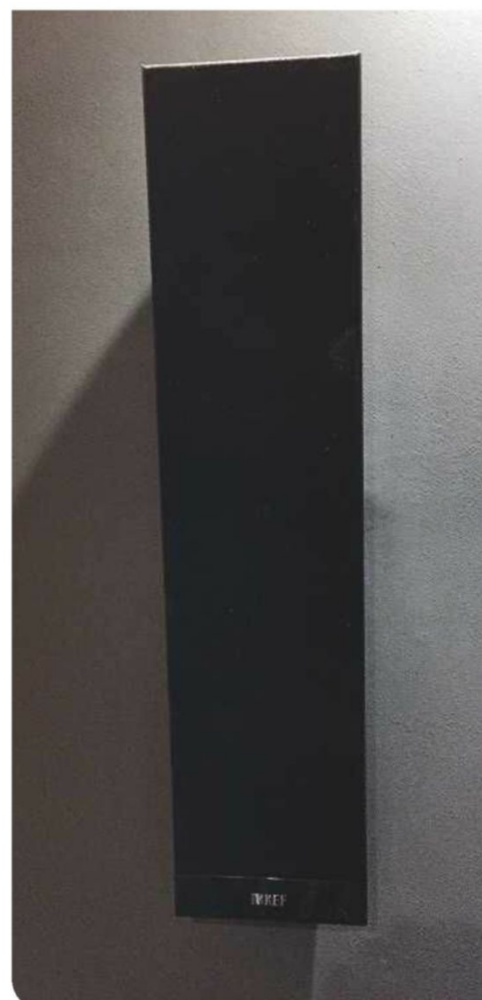
In total, including the build costs and all the hardware, etc, around £25,000.



Reworking the integral garage into a home cinema meant the space had to be cleared and stud walls – with acoustic plasterboard – fitted



For the front wall, our AV-Holic had a full-width AV cupboard constructed, to eventually sit below the LCR speakers and projector screen



Above: While Ed loves his Pioneer BDP-LX58 player, he is planning to upgrade his AV receiver

Left: Slimline KEF T-Series speakers are mounted on-wall for the rear and surround channels



Above: The cinema room features Control4-powered smart operation, and dimmable lighting

Left: Providing hi-def images is Epson's well-regarded EH-TW9200W projector



Ed says the finished room adds a real 'sense of occasion' to watching movies

What's your favourite bit of kit?

The Pioneer BD deck. Previous to that I had a Panasonic player that I thought was excellent; this machine blows it out of the water for image and sound quality.

What's next on your kit list?

I need to upgrade the AV amplifier as it's very weak, especially in the bass department. I am looking at a Yamaha RX-A3050 to really drive the speakers. The room is wired for a 7.2.4 setup but currently I am using a 7.1 system. Once I get the amp I will look to put four ceiling speakers in for Dolby Atmos and DTS:X soundtracks.

I am keen to see a 4K projector with a native source to really understand whether an upgrade would be worthwhile. I need to be convinced that the step up in image quality is worth the investment. I expect to see the price of 4K projectors drop over the next 12 months as more manufacturers enter the market, so will probably upgrade to 4K at some stage.

What do friends and family think of the cinema room?

My friends are blown away. When you say 'projector' they think of those ones used in offices and can't believe the image quality. My three children also love watching films in

there (with me), although the cinema room is kept locked in the day!

What discs do you use to show off the system?

Star Wars: The Force Awakens, when the Millennium Falcon first takes off. Then there's *Mad Max: Fury Road* and *The Revenant* for sheer image quality.

And, lastly, what are your favourite films?

At the moment I'd say *Star Wars: The Force Awakens*, *Deadpool* and *Mad Max: Fury Road* ■

Share your system in the mag!

If you want to be in **HCC**, you'll need to send us some hi-res images of your cinema room. Here are a few tips for great-looking pictures:

1. Go big. Set your camera to take images at the largest possible size, and at the highest resolution. Don't worry about cropping or resizing – we will make them print-ready.
2. Get in focus. Make sure your photos are as sharp and clear as possible. If you have one, use a tripod, or place your camera on a flat, steady surface and take pictures on a delay. The sharper they are, the bigger we can print them.
3. Let some light in. While we tend to watch

movies in the dark, our cinema systems look their best when they are lit. If you can shoot with natural daylight, do so. If your room doesn't get a lot of light (a garage conversion, for instance) then switch on whatever lights are fitted. Avoid using flash wherever possible.

4. Be thorough. Send photos of as much of the room as possible. Images of both the front and back of the room, the kit rack, speakers, seating, disc shelf, movie poster art... The more the merrier.

5. Don't be shy. Send a picture of yourself!
6. Show us more. Got pictures of your room before it was a cinema? Or snaps of work being done? We love to see these, too.

Email your selection of images to letters@homecinemachoice.com with the subject heading 'AV-Holic'. Provide us with some information about your setup – including a full kit list – and we'll then be in touch.



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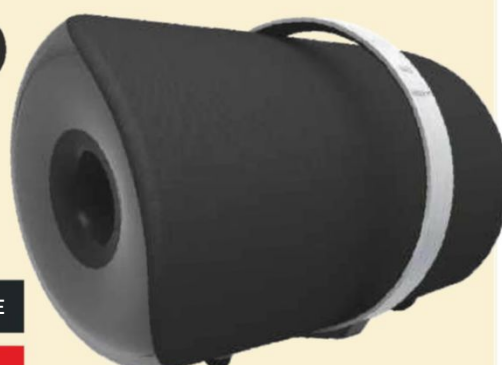
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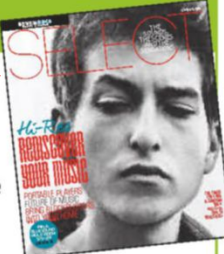
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PLAYBACK

→ **SOFTWARE HIGHLIGHTS** **LONDON HAS FALLEN** Gerard Butler braves terrorists and the Tube **MIDNIGHT SPECIAL** Sci-fi road movie harks back to the 1980s **HIGHLANDER** Celebrating 30 years with a new 4K restoration **BATMAN: THE KILLING JOKE** Why so serious? **JAWS SEQUELS** Just when you thought it was safe to go back into your movie den **& MORE!**



Plenty of 'X' appeal

The X-Files: The Event Series → Twentieth Century Fox → All-region BD

Get ready for a close encounter of the spooky kind as FBI agents Fox Mulder and Dana Scully return after almost 15 years off our TV screens to investigate six new cases of the mysterious and macabre. The truth about this Blu-ray is out there – on p104.

| HCC RATINGS KEY... | |
|--------------------|-------|
| Outstanding | ★★★★★ |
| Above average | ★★★★☆ |
| Acceptable | ★★★☆☆ |
| Disappointing | ★★☆☆☆ |
| Dire | ★☆☆☆☆ |

All prices quoted are approximate and may have changed

Mike hated
people who tried to
travel without
a valid ticket



City break goes with a bang

As the nursery rhyme says: 'London bridge is falling down, falling down, falling down...'

→ LONDON HAS FALLEN

Arriving in cinemas in 2013, Antoine Fuqua's *Olympus Has Fallen* was the more enjoyable of that year's brace of 'Die Hard-in-the-White House' movies (the other being *White House Down*). Indeed, such was the film's success that US president Ben Asher (Aaron Eckhart) and bodyguard Mike Banning (Gerard Butler) have returned, this time with the whole of London as the backdrop for more terrorist action.

While we weren't expecting much in the way of realism (Stansted Airport appears to be a single runway and hangar in the middle of a field), we were at least expecting *London Has Fallen* to be fun. Sadly, from the hackneyed dialogue and absence of humour to cheap special effects and stereotyped characters, the film misses its mark by miles.

It's a total shambles from start to finish, a dismal sequel that doesn't merely fail to live up to the standards of its predecessor, but fails to meet those of most DTV action movies. The franchise has fallen.

Picture: The movie arrives onto Full HD Blu-ray with a perfectly adequate 2.40:1-framed 1080p AVC encode that does everything you'd expect from a modern actioner.

The first half of the film in particular holds up very well, with the bright daytime exteriors revealing excellent clarity, strong colour saturation, nice textures and an impressive sense of depth. The only real downside to all of this is that it does tend to highlight the artificiality of many of the fairly naff VFX shots. The second half goes gloomier as night



descends, and while noise can be spotted on occasion, overall the image still stands up to scrutiny, with excellent black levels and a good amount of shadow definition.

Audio: It's only right and proper for a film that blows up chunks of central London to demand a stonking soundtrack – and *London Has Fallen*'s DTS-HD MA 5.1 mix certainly delivers in this regard. Packed with dynamic surround effects and thunderous bass, Chapter 3's terrorist attacks are pure demo-fodder. Likewise, a *Call of Duty*-esque street assault (Chapter 9) is enlivened tenfold by bullets constantly zipping past you from the front to the rear of the soundstage, in a superb example of sonic steering.

Away from all of this, dialogue is always crystal-clear (which, admittedly, isn't always a good thing where this script is concerned) and the bombastic score soars above all the chaos. It should be a five-star mix, then – yet Universal's (all-region) US disc features a DTS:X presentation. Just why Lionsgate hasn't done the same for UK consumers is something we'll probably never know, but it's enough to mark the audio grade of this release down – there's a more impactful incarnation available on Blu-ray if you can be bothered to import it.

Extras: *London Has Fallen*'s meagre bonuses are almost as lacklustre as the film itself – *the Making of London Has Fallen* (18 minutes) is a generic overview of the production that's short on real insight, while *Guns, Knives and Explosives* (eight minutes) takes a closer look at the film's bigger action set-pieces. And that's your lot.

HCC VERDICT

London Has Fallen

→ Lionsgate → Region B BD
→ £25

WE SAY: A worthless sequel on a hi-def platter that doesn't quite live up to its full audio potential

Movie: ★★☆☆☆

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★☆☆☆

OVERALL: ★★☆☆☆

Grimsby

Sony Pictures → All-region BD
£25



Sacha Baron Cohen and Mark Strong star in this gross-out spy spoof about a lager-swilling dimwit whose long-lost

brother turns out to be a secret agent. This plotline serves as an excuse for a film that mixes high-octane action (courtesy of director Louis 'The Transporter' Leterrier) with a stream of politically incorrect and occasionally stomach-churning gags. But what else would you expect from the man responsible for *Borat*? In addition to a top-tier AVC 2.40:1 Full HD encode, this disc also delivers a thrilling DTS-HD MA 5.1 soundtrack. Extra features are fun, if not particularly expansive.



Eddie the Eagle

Lionsgate → Region B BD
£25



It may not soar like an eagle, but Dexter Fletcher's biopic of the plucky Olympic ski-jumper is the sort

of likeable flick that will no doubt find a happy home on the Xmas TV schedules. Utterly conventional in its mix of broad comedy and syrupy sentiment, the film benefits massively from the chemistry generated by its central pairing of Taron Egerton as the dorky Eddie and Hugh Jackman as his (fictional) boozy coach. Lionsgate's hi-def platter delivers crisp, colourful 1080p visuals and lively Dolby Atmos sonics. Extras include a 47-minute *Making of...* and four deleted scenes.



The Divergent Series: Allegiant

Entertainment One → Region B BD
£25



As with *The Twilight Saga* and *The Hunger Games* before it, the adaptation of the final book in *The Divergent Series* has been split into two films. And as with the first parts of

the final instalments in those other franchises... *Allegiant* seems to be running on the spot rather than building momentum towards the story's finale. At least this Blu-ray offers some AV thrills with gorgeous 2.40:1 1080p visuals and rousing Dolby Atmos audio; it's just a pity that there's not more action sequences to show it off. A rather dry commentary by two producers and six *Making of...* featurettes are also included.



The road to somewhere special

Potent sci-fi chase film channels the spirit of Steven Spielberg and John Carpenter

→ MIDNIGHT SPECIAL

Having snatched his eight-year-old son Alton (Jaeden Lieberher) from a cult that worshipped the boy as their saviour, Roy Tomlin (Michael Shannon) and his friend Lucas (Joel Edgerton) go on the run. But it isn't just cult members that want to get their hands on this unusual kid. NSA analyst Paul Sevier (Adam Driver) and an FBI task force are also in hot pursuit after discovering that Alton's prophecies relate to top-secret government info seemingly intercepted from satellite transmissions.

Oh, and if that's not enough cause for concern, Alton regularly manifests strange glowing light from his eyes, requiring him to wear goggles most of the time. As we said, he's an unusual little boy.

Clearly inspired by the likes of John Carpenter's *Starman* and Steven Spielberg's *Close Encounters of the Third Kind*, writer-director Jeff Nichols' latest is a thrilling sci-fi chase movie backed up by excellent performances. Worth a watch.

Picture: *Midnight Special* may not be the flashiest film around, but that's not to say that this isn't a strong Blu-ray presentation. The 2.40:1 Full HD image proves particularly proficient with the film's abundance of night-time footage, revealing plenty of shadow detail in its perfectly rendered blacks. Colours are generally rather muted, but intentionally so. There's also an authentic texture to the imagery that comes from being it shot on film.

Audio: *Midnight Special*'s DTS-HD Master Audio 5.1 soundmix features plenty of immersive audio trickery when the story requires it. The reveal of Alton's powers in Chapter 4 is heralded by room-rumbling



low frequencies, while the fragments of a satellite crashing to the ground in Chapter 5 give rise to a surround effects showcase.

Dialogue sounds entirely natural and is nicely balanced in the mix. A driving pulsing score (provided by Nichols' regular collaborator David Wingo) also sounds excellent.

Extras: In lieu of any commentary track, the only bonus material here is a collection of nine interviews with actors Michael Shannon, Joel Edgerton, Kirsten Dunst, Adam Driver, Jaeden Lieberher and Sam Shepard, writer-director Jeff Nichols, and producers Brian Kavanaugh-Jones and Sarah Green. Most run for under four minutes, but at least the chat with Nichols lasts for twice that length.

These sit in place of the *Origins* featurette (five minutes) and five *Unseen World* character videos (13 minutes) that appeared on the Blu-ray put out in the US by Warner Bros.



HCC VERDICT

Midnight Special

→ Entertainment One
→ Region B BD → £25

WE SAY: Quality HD picture and sound make amends for this intriguing thriller's limited extras

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★☆☆☆

OVERALL: ★★★★★

Navigating troubled waters

Can this trio of long-awaited Blu-ray releases lead to a critical reappraisal for any of the sequels to Steven Spielberg's seminal 1975 blockbuster?

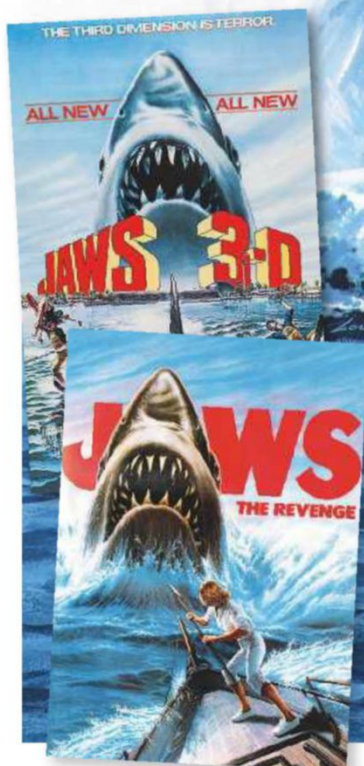


→ JAWS SEQUELS

In the mid-'70s Hollywood sequels were far less prevalent than they are today. But with Steven Spielberg's *Jaws* breaking box office records and endless knock-offs (*Grizzly*, *Orca*, *Piranha*, et al) crawling out of the woodwork, it's understandable that Universal Studios would want its own shot at cashing-in on the success of its aquatic smash hit.

As with the original film, production on *Jaws 2* (1978) was anything but smooth. After toying with several different concepts (including the sinking of the *USS Indianapolis*), the producers opted for a return to

The sequel posters are arguably more iconic than the actual films...



Amazingly the special effects got worse with each new entry in the franchise...



Rubber shark vs inflatable banana



Michael Caine wasn't around to pick up his Oscar for *Hannah and Her Sisters* due to reshoots on *Jaws: The Revenge*

Amity Island to pit Police Chief Brody (Roy Scheider) against another great white shark. Even with this settled there were still plenty of problems, not least director John D. Hancock being replaced by Jeannot Szwarc after several weeks of shooting, prompting yet another script rewrite.

Add to this all of the usual issues with shooting at sea and it's a miracle we even got a finished film, let alone one as enjoyable as *Jaws 2* turned out to be. Okay, so comparisons with Spielberg's film do this one no favours whatsoever, but judged on its own terms it's one of the better 'revenge of nature' movies of the era. The plot is culled from the in-fashion slasher genre (a group of teens are stalked and killed), but the quality of the cast and the time spent developing characters helps elevate *Jaws 2* to something pretty good.

Swimming into cinemas in 1983, *Jaws 3* (aka *Jaws 3-D*) saw production designer Joe Alves promoted to director. This time around the shark(s) turn up at the SeaWorld water park where the now adult Michael Brody (Dennis Quaid) just happens to work. Well, what are the odds of that?

From the time of its release, *Jaws 3* has been rightfully lambasted for its not-so-special effects and relentless stupidity. But that's precisely what makes it so much fun – if nothing else, you could never call *Jaws 3* boring.

This is more than you can say about 1987's *Jaws: The Revenge*, a franchise-killing yawn-fest that's so far off the quality of the original it's painful. Back in *Jaws 2* Chief Brody was told that 'Sharks don't take things personally.' Maybe somebody should have

mentioned that to the masterminds behind this epic turkey. Not only does the film find a great white setting a trap(!) for Sean Brody, the beastie then follows Ellen Brody (a returning Lorraine Gary) to the Bahamas. Annoyingly, once the shark gets there it doesn't really do much of anything, only chowing down on a couple of people across the entire film.

And that is *Jaws: The Revenge*'s biggest sin (beyond the abundant filmmaking gaffs). It's just so unforgivably dull that no amount of stupidity – or Michael Caine – can keep you interested.

Picture: *Jaws 2* sports what appears to be an older off-the-shelf 2.35:1 HD master. Colours are fairly striking, while clarity and detailing are strong. Best of all, there's no obvious print damage or signs of any digital tinkering.

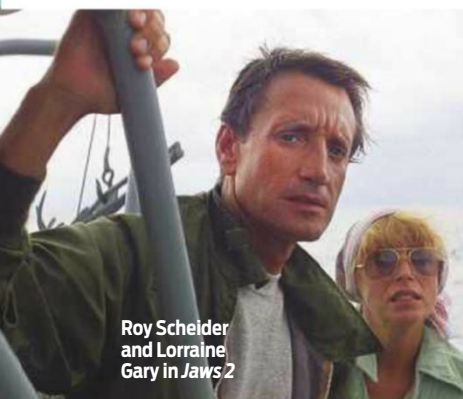
Jaws 3 is harder to rate from a visual standpoint because the 2D and 3D 2.40:1-framed encodes look so different. The 2D transfer appears especially soft and suffers from some distracting registration issues on the left-hand side of the screen. The 3D version looks much more refined and sharp. As befits an exploitation film of this ilk, it's also one of the most eye-popping 3D films we've ever come across, poking things out of the screen at every opportunity. Some instances of negative parallax push things too far, but overall it's a very impressive 3D image.

That just leaves us with *Jaws: The Revenge*. Sadly, as woeful as the movie is, it doesn't deserve to be treated as badly as it is here. While colours are accurate, the 2.40:1 image shows clear signs of digital noise reduction throughout, wiping out grain and fine detail in equal measure. Boo!

Audio: *Jaws 2* features a nicely rendered LPCM mono soundtrack. *Jaws 3* upgrades to a DTS-HD MA stereo mix that creates a pleasingly wide soundstage. Taking things a step further, *Jaws: The Revenge* delivers a DTS-HD MA 5.1 mix that lifts the (all-too-infrequent) action with effective panning effects and modest LFE support.

Extras: All three discs include trailers for the film in question. On top of this, *Jaws: The Revenge* adds the original ending (in 1080p) that was changed after audience testing, but which has turned up on some TV prints over the years.

Jaws 2 fares best of all, though, with the Blu-ray porting over all of the old DVD extras. These include four deleted scenes, a 45-minute *Making of...*, two interviews and storyboards for three scenes.



Roy Scheider and Lorraine Gary in *Jaws 2*

HCC VERDICT

Jaws 2

→ Universal Pictures → All-region BD → £20

WE SAY: Decent picture, sound and extras make for a solid HD package for this underrated sequel

Movie: ★★★★★
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★★★★

OVERALL: ★★★★★

HCC VERDICT

Jaws 3

→ Universal Pictures → All-region BD → £20

WE SAY: The 3D presentation alone makes this disc a must-own for fans of vintage stereoscopic films

Movie: ★★★★★
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★★★★

OVERALL: ★★★★★

HCC VERDICT

Jaws: The Revenge

→ Universal Pictures → All-region BD → £20

WE SAY: Easily the worst of the lot – both as a movie and a Blu-ray. Digital scrubbing ahoy!

Movie: ★★★★★
Picture: ★★★★★
Audio: ★★★★★
Extras: ★★★★★

OVERALL: ★★★★★

Arcade Action

Bigscreen home entertainment isn't just about movies anymore. **Anton van Beek** checks out a videogame vying for time on your home cinema system...



LEGO Star Wars: The Force Awakens

Warner Bros. Interactive Entertainment → PS4, PS3, Xbox One, Xbox 360, Wii U, PC → £40

There's something magical that happens whenever LEGO and *Star Wars* come together. It was, of course, 2005's *LEGO Star Wars: The Videogame* that first ushered in the toy brand's popular line of movie-related games. And now, just as the oft-repeated formula of the series was starting to wear a little thin, the partnership works its wonder again. Quite simply, *...The Force Awakens* is the most creative, well-paced and exciting game in the series since 2006's *LEGO Star Wars: The Original Trilogy*.

As with its predecessors, the game takes players through a series of levels based on key locations and events from the film. For the most part the play mechanics are familiar as well, with each stage offering a mix of puzzles (usually based around building helpful equipment out of LEGO blocks) and some light action.

There are a few new tweaks this time, and for once we're happy to report that they really do add to the overall experience (unlike, for example, *LEGO: The Hobbit*'s interminable object crafting). On the puzzling side of things, gamers are now frequently offered a series of two or three builds from each pile of blocks, allowing the developers to cook up more complex solutions.

The action has also been beefed up with the addition of cover-based shootout sections. It's not quite *Gears of War*, but it's still a lot of fun. Vehicular combat levels have also been overhauled and now deliver the sort of dogfighting battles that would feel at home in the old *Star Wars: Rogue Squadron* games.

The spoof-tastic fun doesn't end with the events depicted in *...The Force Awakens* either. As well as kicking off with the Battle of Endor, the game's bonus missions frequently serve to fill in the gap between *...Return of the Jedi* and the new film. So, if you've ever wondered how Han captured those Rathtars and what happened to the rest of his crew, here's the chance to find out first-hand.



Absolute Beginners

Second Sight → Region B BD
£20



The passage of 30 years has been kind to Julien Temple's musical turkey about love, fame and racial hatred. Sure, it's still a mess and Patsy Kensit really can't carry a tune, but freed

from the hype that surrounded its original cinema release, it's far easier to appreciate the film's eclectic excesses. Second Sight's praiseworthy Blu-ray release also highlights its visual flair with lush 2.40:1 Full HD imagery, while audio is offered in both LPCM stereo and (noticeably quieter) DTS-HD MA 5.1 flavours. A superb 53-minute retrospective doc is the sole extra.



Sorority Babes in the Slimeball Bowl-O-Rama

88 Films → Region B BD
£18



Legendary scream queens Linnea Quigley, Michelle Bauer and Brinke Stevens star in this silly 1988 horror comedy about a wish-granting imp freed from a bowling trophy by a gang of

nerdy guys and curvaceous gals. In other words: it's your typical *Monkey's Paw* setup with adding spanking and a gratuitous shower scene. The great news for fans is that this new Blu-ray release trumps the same label's 2012 DVD in every regard. Not only has the film been lovingly restored from the original 35mm negative, it's also joined by a lively chat-track and over two hours of behind-the-scenes footage.



Return of the Killer Tomatoes

Arrow Video → Region A/B BD &
R1/2 DVD → £16



Arriving in 1988, this belated sequel to John DeBello's goofy 1978 horror-comedy *Attack of the Killer Tomatoes* is a far more successful spoof that benefits

hugely from a charismatic cast (including a young George Clooney) and more polished gags. The 2K restoration may not be the prettiest around, but it's surely the best this low-budget flick has ever looked. It also sounds pretty good thanks to the cleaned-up LPCM dual-mono soundtrack. Bonus goodies include a commentary from DeBello and a fun 17-minute chat with leading man Anthony Starke.





Like a Bat out of hell...

DISC
OF THE
MONTH

The Dark Knight gets darker in this animated adaptation of the controversial graphic novel

→ BATMAN: THE KILLING JOKE

The mid-1980s were a period of huge transition for comic books. The likes of Alan Moore and Dave Gibbons' *Watchmen* and Frank Miller and Klaus Janson's *The Dark Knight Returns* (both published in 1986) saw the medium being used to explore the psychological depths of their protagonists. Suddenly, superhero comics weren't just for kids any more.

Even so, Alan Moore and Brian Bolland's 1988 one-shot graphic novel *Batman: The Killing Joke* still managed to shock readers. And while the book continues to be praised to this day, regularly coming near the top of lists of the best ever Batman comics, it's just as frequently condemned for its treatment of Barbara Gordon/Batgirl at the Joker's hands.

All of which makes Warner Bros. Animation's decision to adapt the ...*The Killing Joke* as the 26th instalment in its series of DC Universe Animated Original Movies either an incredibly brave move or one that's just asking for trouble. So which is it?

Well, as the BBFC's '15' certificate makes abundantly clear

the production team certainly hasn't smoothed over the rougher areas of the original graphic novel. But, due to the slight nature of the source material (which amounts to around 45 minutes



Kevin Conroy and Mark Hamill return to voice Batman and the Joker



HCC VERDICT

Batman: The Killing Joke

→ Warner Bros. → All-region BD
→ £20

WE SAY: This thrilling adaptation of the classic graphic novel looks and sounds Bat-tastic on Blu-ray.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

of screen time) the creators of this animated feature have grabbed the chance to construct an entirely new opening act that foregrounds the character of Batgirl, explores her relationship with Batman (albeit with one event that is bound to stir its own controversy) and elevates her from mere victim status in the story. Meanwhile, a new coda (drawn from subsequent events in the comics) helps point towards a bright future for Barbara Gordon in the Batman universe.

All told, it's a worthy expansion of a classic story that redeems some of its more tricky subject matter. That fact the new material does nothing to lessen the impact of Moore's tale should only help sell this impressive adaptation to older Bat-freaks.

Picture: Despite some banding issues, *Batman: The Killing Joke* makes for a stylish 1.78:1 Full HD viewing experience. Colours are bold, line work is sharp, contrast is excellent and macroblocking is almost nonexistent.

Audio: The DTS-HD MA 5.1 mix creates a convincing three-dimensional soundscape that helps immerse you in the action. Spatial effects are used judiciously throughout, while dialogue and music are rendered flawlessly at all times.

Extras: The Blu-ray squeezes in two excellent featurettes about the portrayal of the Joker in the story and scoring the film. Also included are two classic *Batman: The Animated Series* episodes (sadly not upgraded to HD) and extended trailers for other DC animated films, including the upcoming *Justice League Dark*.



Big in Japan (and elsewhere too)

Live-action comic book/cartoon adaptation brings giant-sized horror to the fore

→ **ATTACK ON TITAN: THE MOVIE – PART I**

Hajime Isayama's *Attack on Titan* is already the big Japanese manga and anime phenomena of the past decade, so it's hardly surprising to find it also making the jump into the world of live-action movies.

Set at an unspecified point in the future, this first of two films finds the last remnants of humanity hiding behind enormous walls designed to keep them safe from the mysterious man-eating giants, known as Titans, that decimated the planet 100 years earlier. Things go from bad to worse, however, when the Titans breach the outer wall of the settlement, leaving a trail of death and destruction in their wake. Cut to two years later and our hero Eren (Haruma Miura) and his best friend Armin (Kanata Hongo) have joined the army. But there are bigger surprises than just the Titans waiting to be confronted out in the wilds...

While the basic concept is the same and some of the characters seem familiar, this is not the *Attack on Titan* that you may have read or seen before. Instead, this live-action version recasts what was a tale of heroic fantasy into a piece of out-and-out horror. Perhaps it was an unavoidable side effect of bringing Isayama's grotesque, smiling giants into the 'real world', but this is an intensely unsettling and nightmarish movie that really plays up the body horror elements of the original material.

It's just a pity that the translated dialogue is so woefully leaden and that so little time is given over to developing the main characters that there's often confusion about who is who. Still, despite those



This caption is only here to protect the Titan's modesty

complaints (and all the moaning about changes from die-hard fans of the manga and anime) we have to admit that we're hooked and look forward to seeing how ...*Part 2* manages to wrap it all up.

Picture: The Blu-ray sports a commendable 2.40:1 1080p encode. Brightly-lit scenes show strong primary colours and excellent delineation, while darker material exhibits stable black levels that are free from crush. All told, it's rather good.

Audio: For all of its sweeping spatial effects, the disc's Japanese DTS-HD MA 5.1 mix seems to lack a little range at the top and bottom of the spectrum. As such, every element in the mix appears to occupy the same mid-ground, giving audio a slightly 'mushy' feel that lacks impact. Also, given the subject matter, surely this was a film that was crying out for a Dolby Atmos or DTS:X track...

Extras: Nothing at all – unless you count the rather spiffy steelbook packaging. We don't.



HCC VERDICT

Attack on Titan: The Movie – Part I

→ Manga Entertainment
→ Region B BD → £25

WE SAY: An enjoyably gory piece of Japanese action-horror with a couple of disc niggles.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

Curtain

FrightFest Presents/Icon → R2 DVD
£15



When ex-nurse Danni (Danni Smith) moves into her poky New York apartment she quickly encounters a problem

with the bathroom. And we aren't talking about a blocked toilet or leaky tap – no, Danni's bathroom is home to some kind of multidimensional portal that swallows up every shower curtain she hangs in there. Silly? Sure. Scary? Not really, but that doesn't stop this chucklesome oddity being one of the highlights to date of the FrightFest Presents lineup. The actual disc is no slouch either, with solid AV credentials and some fun extras including a chat-track and jokey *Making of...* video.



Anomalisa

Curzon Artificial Eye → Region B BD
£20



Charlie Kaufman, writer of the sublime *Being John Malkovich* and *Eternal Sunshine of the Spotless Mind*, returns

with his most emotionally complex and profoundly human story yet – the irony being that it's all done with puppets. Kaufman's stop-motion animated tale of love and alienation arrives on Blu-ray with a beautiful 2.40:1 1080p encode that highlights the level of craftsmanship put into the film's characters and environments. The DTS-HD MA 5.1 mix is unexpectedly immersive. Limited extras include 13 tiny featurettes and a 26-min Q&A with the filmmakers.



The Seven-Ups: Special Edition

Signal One Entertainment
Region B BD → £13



Bullitt and *The French Connection* producer Philip D'Antoni's sole directorial credit is yet another moody 1970s

crime thriller boasting an unforgettable car chase. This time around Roy Scheider plays the head of a renegade police task force that comes under suspicion of being involved in a string of mob-related kidnappings. This satisfying cop drama arrives on Blu-ray with an authentically gritty 1.85:1 1080p encode and clear LPCM mono sonics. Extensive extras include a chat-track, interviews and the cut-down Super 8 version of the film.



Strangerland

Kaleidoscope Home Entertainment
R2 DVD → £18



There's more than a whiff of Peter Weir's *Picnic at Hanging Rock* about this new Aussie melodrama, where a

family relocates to a remote desert town only for their teenage kids to vanish into the wilderness. Sadly, despite a bravura performance from Nicole Kidman and plenty of psycho-sexual shenanigans, *Strangerland* soon runs out of steam and falls far short of recapturing the haunting horror of Weir's 1975 masterpiece. Denied a Blu-ray release in the UK, Kaleidoscope's DVD sports a richly-coloured anamorphic 2.40:1 transfer and an evocative DD5.1 mix. A trailer is the disc's sole bonus feature.



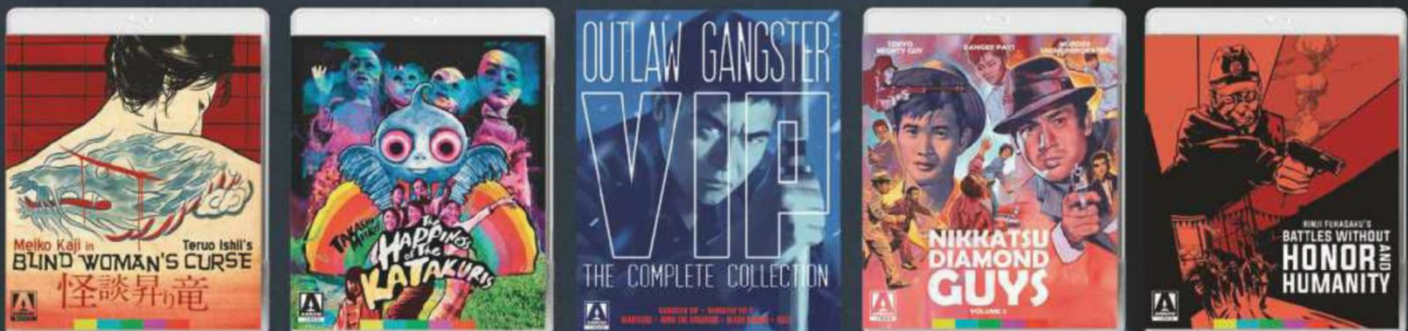
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After all this time they
still haven't figured out
how to turn the lights on



The truth is still out there...

The defining cult TV series of the 1990s goes looking for answers in six uneven new adventures

→ THE X-FILES: THE EVENT SERIES

It's been 14 years since TV audiences last joined FBI agents Fox Mulder (David Duchovny) and Dana Scully (Gillian Anderson) as they investigated the supernatural, otherworldly and downright bizarre.

In 2016 the legions of 'X-philes' finally got what they'd been asking for, with *The X-Files* returning to the small screen in a truncated 'Event Series'. Would the new episodes be able to recapture the magic of the show's original run?

The answer to that question is: sort of. Rather than using its shorter-than-usual six-episode series to tell one ongoing story, series creator Chris Carter and team have opted to give fans a quartet of 'Monster of the Week' stories, book-ended by a two-part story harking back to the original show's ongoing 'Mythology' arc.

As was the case back in the day, the 'Monster of the Week' episodes are hit-and-miss affairs, this time involving mind control (*Founder's Mutation*), killer graffiti (*Home Again*) and domestic terrorism (*Babylon*). However, this batch also includes the highlight of the revival: writer-director Darin Morgan's *Mulder and Scully Meet the Were-Monster*. Laugh-out-loud funny and surprisingly poignant in places, it's a welcome reminder of what *The X-Files* is capable of when it acknowledges and embraces the absurdity of its central premise.

Which leaves us with Chris Carter's book-end episodes *My Struggle* and *My Struggle II*. Oddly, this



is where the 'Event Series' really comes a cropper. Less a coherent story than a sloppy attempt to concoct yet another alien conspiracy through endless scenes of ungainly exposition, it's enough to make even the most die-hard fan tear their hair out in frustration. And don't even get us started on that final cliff-hanger...

Picture: This Blu-ray release spreads its six episodes across a pair of BD-50 platters; with four episodes on the first disc and the final two (plus the bulk of the extras) on the second. By doing this Fox has given each AVC 1.78:1 Full HD encode plenty of room to breathe – and the results are excellent.

Details are crisp throughout, with facial close-ups bringing forth a wealth of fine wrinkles and tiny hairs. Colours are also bright and bold, while those all-important black levels are suitably inky, with no sign of crush or unsightly noise.

Audio: While not quite as impactful as the image quality, the disc's DTS-HD MA 5.1 mixes are still incredibly effective. Dialogue is forthright and pinned to the centre channel, Mark Snow's score exhibits excellent range, and use of the surrounds really perks up during the episodes' more spooky moments.

Extras: This set serves up a comprehensive array of goodies. These include three episode commentaries; a 54-minute look at shooting the first episode; 13 additional behind-the-scenes featurettes; two deleted scenes; a gag reel; and a look back at some of the original run's best monsters. There's even an (unrelated) creepy short film by one of the crew.

HCC VERDICT

The X-Files: The Event Series

→ Twentieth Century Fox
→ All-region BD → £30

WE SAY: It's a shame that the revival itself can't maintain the consistent high quality of this Blu-ray release

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

The Ox-Bow Incident

Arrow Academy → Region B BD & R2 DVD → £16



While the concept of justice was always one of the tenets of the Western genre, rarely was it tackled as

powerfully as in this 1943 study of mob mentality and intolerance – and it still feels relevant today. Based on a 4K restoration undertaken by Fox from a 35mm dupe negative, Arrow's Blu-ray has some inherent softness, but is still miles ahead of previous releases in terms of sharpness, detail and clarity. The disc also sports a feature-length chat-track, a 1997 TV doc about star Henry Fonda, plus an exclusive intro and commentary on six scenes by genre expert Peter Stanfield.



Poor Cow

StudioCanal → Region B BD £23



The feature film debut of director Ken Loach, this kitchen-sink drama follows ironically named

working class single mother Joy (Carol White, star of Loach's hard-hitting 1966 TV play *Cathy Come Home*) as she searches for some small shred of happiness. As bleak as this may sound, there's a warmth and humanity to the story and characters – while fans of *The Limey* can have fun spotting the footage of a young Terence Stamp re-used as flashbacks in that film. On top of an impressive new restoration, the Blu-ray offers up new interviews with Loach, Stamp and author Nell Dunn.



Dr. Strangelove...

Criterion Collection → Region B BD £25



Arguably Stanley Kubrick's best film, this cold war satire makes a triumphant return to Blu-ray as part of

Criterion's UK lineup. So what's different? Well, visually it's pretty much identical to the original 2010 release (no bad thing given that platter's stunning 4K restoration). As for audio, the 5.1 remix has changed from Dolby TrueHD to DTS-HD Master Audio, while the mono track has been upgraded from Dolby Digital to LPCM. Finally, while Criterion's disc ditches the old Picture-in-Picture track, it keeps most other archival extras and adds new interviews, two trailers and a booklet.



Ivan's Childhood

Curzon Artificial Eye → Region B BD £20



Set on the Eastern front during the dying months of World War II, Andrei Tarkovsky's 1962 feature debut

follows a battle-scarred 12-year-old orphan employed by the Russian army to spy on German forces. Unlike Tarkovsky's later films, *Ivan's Childhood* tells a fairly straightforward story, but just like them it's achingly beautiful – a fact made even more apparent by the immaculate 1.37:1-framed 1080p visuals served up by this disc. Add to that some interesting extras and we can't wait to see what the label has in store for the rest of Tarkovsky's films on Blu-ray.



From Russell with love

Flamboyant filmmaker's lurid tale of sex and identity scrubs up nicely on Blu-ray

→ CRIMES OF PASSION

This steamy 1984 thriller stars Kathleen Turner as Joanna Crane, a fashion designer who moonlights as a prostitute called China Blue. But Joanna's double-life is soon complicated by the arrival of two new men in her life. The first is Bobby (John Laughlin), an unhappily married electronics expert hired to spy on Joanna, who ends up falling in love with her instead. Much more troubling is the obsessive 'Reverend' Peter Shayne (Anthony Perkins), whose idea of 'saving' Joanna/China isn't likely to win him the Samaritan of the Year award...

With its heady mix of sex, satire and religion, it's easy to see why controversial British director Ken Russell was tempted back to Hollywood by Barry Sandler's script for *Crimes of Passion*. And while the film fails to reach the same dizzying heights as his 1971 classic *The Devils*, it remains the late director's last truly great piece of movie madness.

Picture: Based on an exclusive new 2K restoration of the original 35mm interpositive, *Crimes of Passion* looks nothing less than stunning on Blu-ray. Detailing and contrast levels are uniformly excellent, while film grain is resolved as expertly as we've come to expect of transfers from Arrow Video. However, the real highlight is the 1.85:1 transfer's majestic colour palette. From the sweaty skin tones to the wonderfully saturated neon pinks and blues that dominate much of the cinematography, it's a joy to finally see *Crimes of Passion* restored to its original visual glory.



Audio: The disc's DTS-HD Master Audio mono track does all that is asked of it.

Dialogue sounds entirely natural, Foley effects are well-balanced in the mix and create a good sense of ambience, while Rick Wakeman's Dvorák-inspired score sounds as synth-tastic as any fan could hope for.

Extras: Arrow's Blu-ray includes both the 107-minute 'Unrated Cut' and Russell's subsequent 113-minute 'Director's Cut' of the film. Available only on the latter version is an audio commentary by Russell and screenwriter Barry Sandler, originally recorded for Anchor Bay's 2002 R1 DVD release.

Other features include seven deleted scenes with optional commentary from Sandler; new interviews with Sandler and Rick Wakeman; Russell's music video for *It's a Lovely Life* (and a gallery of related documents); the trailer; and an illuminating 24-page booklet about the film and its director.



HCC VERDICT

Crimes of Passion

→ Arrow Video → Region A/B BD & R1/2 DVD → £18

WE SAY: A sensational Blu-ray package for Ken Russell's last great Hollywood hurrah.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★



There *should* be only one

Despite being tarnished by terrible sequels, this '80s cult classic is still worth a revisit

→ **HIGHLANDER: 30TH ANNIVERSARY EDITION**

A Frenchman playing a Scot, a Scot playing an Egyptian who has been living in Spain, and an Australian director whose previous claims to fame came from pop videos and a film about a killer pig. It doesn't exactly sound like the recipe for success, now, does it? And yet, somehow, these ingredients came together to create *Highlander*, an enjoyable 1986 fantasy-action film about immortals battling one another across the centuries.

Three decades on from its original release, the film's flaws are more evident than ever. But so are its strengths. The cast (particularly Christopher Lambert, Sean Connery and Clancy Brown) bring real dramatic weight to the rather silly script, while Russell Mulcahy's dizzying direction adds much needed energy to a couple of otherwise lacklustre fight scenes. And then there's the Queen soundtrack, which shovels an extra layer of camp bombast on top of the entire shebang.

If you can leave your brain at the door, *Highlander* is an immensely fun way to spend a couple of hours. And compared to the appalling sequels, TV shows and cartoon that followed in its wake, it's practically a masterpiece.

Picture: First released on Blu-ray in the UK back in 2009, *Highlander*'s second hi-def outing clearly benefits from being based on a new 4K restoration.

Colours in particular appear far richer, textures are pleasingly detailed (particularly in close-ups) and black levels are wonderfully foreboding. That said, there are some source-based anomalies that no



Kids, this is why you shouldn't run with sharp things...

amount of restoration can help, such as a zoom out from an extreme close-up of an eye that looks for all the world like it was captured on VHS.

The extremely heavy grain inherent to the film does seem to have resulted in some compression artefacts – but it's worth noting that these are far less obvious in motion than in our still screengrabs.

Audio: The disc offers DTS-HD Master Audio versions of both the original stereo soundtrack and a 5.1 remix. While purists will no doubt argue against it, the latter supports the film with effective use of the surrounds to open up the action scenes. Dialogue is always clear and Brian May's guitar licks soar.

Extras: This new Blu-ray carries across everything from the earlier 'Immortal Edition' BD and adds a handful of new bits and pieces. The lineup consists of a director's commentary, an extended *Making of...* doc, deleted scenes, interviews with Lambert and Mulcahy, and a trailer.



HCC VERDICT

Highlander: 30th Anniversary Edition

→ StudioCanal → Region B BD

→ £23

WE SAY: If 'there can be only one' *Highlander* Blu-ray, then the new 4K restoration ensures this is it.

Movie: ★★★★★

Picture: ★★★★★

Audio: ★★★★★

Extras: ★★★★★

OVERALL: ★★★★★

The Mermaid: Limited Edition Steelbook

Sony Pictures → All-region BD
£15 (HMV exclusive)



Stephen Chow's latest is a wildly uneven but frequently very funny love story/eco parable about a mermaid (Yun Lin) sent to seduce and kill the arrogant businessman (Chao

Deng) unwittingly responsible for harming her fellow mer-folk. Having broken office records in China, *The Mermaid* lands on limited edition Blu-ray in the UK with a dazzling 2.40:1 1080p encode (sadly not in its original 3D) and a choice of equally boisterous DTS-HD MA 5.1 Mandarin and English soundtracks. Bonus bits are limited to a 13-minute *Making of...*, a two-minute reel of behind-the-scenes clips and a music video.



Man from Deep River

88 Films → Region B BD
£12



Umberto Lenzi's 1972 spin on *A Man Called Horse* is mainly notable for kickstarting the entire cannibal movie

trend in Italian exploitation cinema. Considerably less sleazy – and therefore more fun – than the films it inspired, *Man from Deep River* features a solid 2.35:1 1080p encode on 88 Films' BD. While some gore-fans may be disappointed by the continuing censorship of several scenes, this UK release still merits a purchase by all horror-hedz due to the inclusion of Calum Waddell's fantastic feature-length doc about genre icon Me Me Lai.



Alien 2: On Earth

88 Films → Region B BD
£12



A delay in registering the trademark for *Alien* was all the invitation the Italian film industry needed to cash in on

that film's box office success with its own unofficial sequel. Unable to match the budget or production values of Ridley Scott's sci-fi blockbuster, writer-director Cirioppo's 1980 flick finds a group of explorers terrorised by a face-bursting alien in a network of caves and then a bowling alley (don't ask). It is, of course, absolutely awful. Still, if you must take the plunge, the good news is that this BD delivers a gorgeous 1080p restoration of the original negatives.



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Collecting...

Sean Connery

The *Highlander* re-issue is a reminder that Sean Connery had an acting career outside of the 007 franchise. **Team HCC** picks ten further cinematic treats starring the great Scot

THE ROCK

This high-concept blockbuster about chemical weapons-toting terrorists seizing control of Alcatraz sees director Michael Bay at the peak of his powers. It's over two hours of race-against-time thrills, outrageous car chases and bullet-strewn action. But at its heart are the performances of its two leads – Nicholas Cage as chemist Stanley Goodspeed and Connery as grumpy former Alcatraz escapee John Mason.

Get it: While initially released on Blu-ray in the UK back in 2007, there's been no real clamour for a reissue, as AV quality is first-rate. However, all the extras are in standard-def and the commentary track of the US platter has drowned somewhere in the San Francisco Bay. Serious fans can import that region-free release.

Sean Connery had *Porridge* writers Dick Clement and Ian La Frenais brought in to rewrite his dialogue in *The Rock*



TOP PICK



A BRIDGE TOO FAR

This massively ambitious World War II movie features one of the greatest ensemble casts ever put together – Sean Connery, as Major General Urquhart, rubs shoulders with James Caan, Michael Caine, Lawrence Olivier, Gene Hackman, Robert Redford, Dirk Bogarde and many more. It's not a feel-good actioner, of course, focusing on 1944's unsuccessful Operation Market Garden.

Get it: Fox's 2009 UK Blu-ray is a fair, but not outstanding, effort; the previous DVD special edition is where to head for decent extras.



THE MAN WHO WOULD BE KING

John Huston's exhilarating 1975 adaptation of Rudyard Kipling's novella stars Connery and Michael Caine as a pair of rogue British soldiers who go looking for a kingdom to rule. A big, broad swashbuckling adventure, *The Man Who Would Be King* provides plenty of thrills and a good deal of laughs, too, thanks to Connery and Caine's terrific chemistry.

Get it: Instead of waiting for Sony to get around to releasing it in the UK, simply import the all-region Warner Bros. BD from the US.



THE UNTOUCHABLES

Brian de Palma's wonderfully OTT Al Capone/Eliot Ness drama/thriller benefits from an Oscar-winning performance from Connery as street-smart cop Jimmy Mallone. All snarling menace and feisty language, he's a perfect foil for Kevin Costner's more reserved Prohibition agent.

Get it: While never given the deluxe treatment some may hope for, *The Untouchables* at least has a solid 2008 BD release. Extras (in SD) are dragged over from the old DVD.



MARNIE

Alfred Hitchcock's morbid 1964 thriller stars Tippi Hedren as the titular thief whose latest target – successful publisher Mark Rutland (Connery) – catches her in the act and forces Marnie to marry him in an attempt to 'cure' her. It may not be Hitchcock at his very best, but the controversial *Marnie* is an engrossing psycho-sexual drama nonetheless.

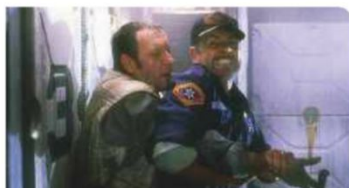
Get it: Available as a standalone disc or in the *Alfred Hitchcock: The Masterpiece Collection* boxset, Universal's 2013 Blu-ray is marred by unimpressive image quality.



THE NAME OF THE ROSE

Based on Umberto Eco's debut novel, Jean-Jacques Annaud's historical whodunnit sees Connery's Franciscan friar investigating a suspicious death in a medieval abbey. If this all sounds too much like an episode of *Cadfael*, it's worth noting the film's cracking supporting cast, which include the likes of F. Murray Abraham, Ron Perlman and a young Christian Slater in one of his first major roles.

Get it: There's no UK Blu-ray, but the US release is all-region and is loaded with two chat-tracks and a 45-minute *Making of...* doc.



OUTLAND

The classic Western *High Noon* gets a high-tech makeover in this 1981 sci-fi flick from director Peter (Timecop) Hyams. Connery stars as the marshall for a mining colony on one of Jupiter's moons, who finds himself standing alone against a group of hitmen hired by the outpost's drug-dealing general manager (Peter Boyle). So there you have it: Connery in space, with a shotgun, kicking ass on what looks like a set left over from *Alien*. What's not to love?

Get it: Another title still unavailable on Blu-ray in the UK. An all-region US disc was released back in 2012.



THE OFFENCE

A passion project for the actor, this 1972 psychological drama finds him playing a cop who beats a suspected child molester to death during an interrogation. Produced by United Artists in return for Connery returning as Bond in *Diamonds Are Forever*, the film was a flop, but its uncompromising intensity makes it an intriguing watch. Connery himself rates it as one of his favourite films.

Get it: Released as part of the *Masters of Cinema* range in 2015, the UK Blu-ray sports suitably gritty hi-def visuals and adds a quartet of new interviews.



ZARDOZ

Often mocked as the film where Sean Connery runs around in a red nappy and knee-high leather boots, there's actually a lot more to *Zardoz* than that. As you might expect from writer-director John Boorman, this 1974 sci-fi is a unique and eccentric experience, using the familiar genre trope of a fractured society as the springboard for all manner of philosophical ruminations. Weird? You bet. But that only makes it even more fascinating.

Get it: Arrow Video's hi-def platter offers up a gorgeous 4K restoration alongside a plethora of illuminating extras.



INDIANA JONES AND THE LAST CRUSADE

With its Nazi baddies and Biblical plot elements, the third Indy flick feels a bit like a retread of *Raiders of the Lost Ark*. Thankfully, the introduction of Connery as Indiana's disciplinarian father adds a new dynamic to the usual chase sequences and acts of derring-do – so much so that the most memorable moments of *...Last Crusade* are the comedy-heavy exchanges between Connery and his exasperated offspring. An inspired casting choice from Steven Spielberg and George Lucas.

Get it: Add this to your collection either on an affordable standalone BD release or in Paramount's *Indiana Jones: The Complete Adventures* boxset.

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Issue No.251



Issue No.252



Issue No.253



Issue No.254



Issue No.255



Issue No.256



Issue No.257



Issue No.258



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Issue No.261



Issue No.262

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→ **GEAR GUIDE** **TELEVISIONS** From entry-level 40in LEDs to flagship 4K monsters
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AV RECEIVERS 5.1, 7.1, 9.2 – we've got all the options covered **SPEAKERS** Killer surround sound setups
for all rooms and budgets **PVRs** Including super-slim Freeview boxes and Sky Q **AND MORE!**



HCC RATINGS KEY...

| | |
|---------------|-------|
| Outstanding | ★★★★★ |
| Above average | ★★★★☆ |
| Acceptable | ★★★☆☆ |
| Disappointing | ★★☆☆☆ |
| Dire | ★☆☆☆☆ |

All prices quoted are approximate and may have changed

TOP 10 Televisions

**Panasonic TX-65DX902B** → £3,300

This HDR-capable 65-incher wears its Ultra HD Premium certification with pride, and employs a full-array backlight to take control of its impressive luminance talents. Imagery is excellent; overall styling is appealing too. *HCC #259*

**Sony KD-75XD9405** → £5,000 ★★★★★

For this 75in HDR flagship, Sony adopts a full array LED backlight. The result is a step-up in image quality over smaller, edge-lit siblings. A big, bold – and expensive – TV. *HCC #261*

**LG OLED55C6** → £3,000 ★★★★★

LG's 2016 OLED line includes Dolby Vision HDR playback and improved luminance – the result is a superb all-round (curved) 4K display that astonishes with its contrast charms. *HCC #262*

**Samsung UE55KS9000** → £2,100 ★★★★★

Samsung's quantum dot/edge LED 4K/HDR looker claims UHD Premium certification. Image quality is routinely great, but light banding can distract and 3D is absent. *HCC #260*

**Panasonic TX-65CZ952B** → £7,300 ★★★★★

Price tag and curved panel will put some off, but this OLED delivers on its high-end promise with show-stopping black levels and masterful colour handling. *HCC #256*

**LG 65EF950V** → £3,700 ★★★★★

An OLED TV with a flat rather than curved screen has instant home cinema appeal. Typically involving UHD performance, but not without some uniformity issues. *HCC #256*

**Sony KD-55XD9305** → £2,000 ★★★★★

Slim-line Android TV that dazzles with its smart design. New backlight tech promises HDR fireworks, but it's not the most subtle when it comes to illumination. *HCC #260*

**Panasonic TX-50DX750** → £1,300 ★★★★★

Mid-range 4K/HDR LED TV. Not as impactful as its DX902 stablemate when it comes to pictures, but a neat design, fun UI and appealing screen size will win it plenty of fans. *HCC #260*

**Hisense 65XT910** → £2,300 ★★★★★

The Chinese marque throws down the UHD/HDR gauntlet to its better-known rivals with this big, well-priced, high-spec TV. Bright and clear images, but short on motion subtlety. *#257*

**Hitachi 49GHT69U** → £500 ★★★★★

49in 4K screen that could appeal to those on tight budgets. This £500 set offers a smattering of catchup, decent connectivity and a generally enjoyable image. No HDR support, though. *HCC #260*

TECH INFO: TELEVISIONS



What? No plasma?: The TV market is now dominated by LED-lit LCD screens. Manufacture and sale of plasma display panels (PDPs), which previously came into play above 42in, has ceased. With LED comes newer technologies. 4K models with a native resolution of 3,840 x 2,160 should at least be on your audition list if you're thinking of a new display; curved models are a consideration if you want to impress the neighbours. Look out for sets claiming support for HDR content, which is part of the forthcoming UHD Blu-ray spec.



Active or Passive: At the beginning of the 3D era, most TVs featured the Active system that uses relatively expensive, powered 3D specs to deliver full-res images to each eye. Passive 3D TVs, which are now more common, have a filter over the screen and use non-powered specs with polarising filters. The glasses are cheap as chips, but the resolution of Full HD 3D is halved to 540 lines horizontally (but remains at 1,920 vertically). The same halving occurs with a 4K screen. Some brands offer both Passive and Active models, depending on the panel used. Glasses-free 3D, heralded by Toshiba's early ZL2 TV, hasn't caught on. The tech is still being worked on, though.

TOP 5 Blu-ray movies

**The Revenant**

Leonardo DiCaprio excels in this brutal period survival drama, and it arrives on UHD Blu-ray with an HDR 10 encode that relishes the naturally-lit cinematography. Masterful DTS-HD mix, too, but more extras would be nice.

**Star Wars: The Force Awakens**

Mostly brilliant return to the world of wookies, lightsabers and the Dark Side. Although Disney says it's saving a 3D BD for later this year, this excellent 2D disc will do for most AV fans.

**The Hateful Eight**

Quentin Tarantino frames his star-studded, epic-length claustrophobic Western at 2.76:1 for a retro aesthetic and it looks remarkable on BD, with immaculate detail and deep, true black levels.

**Zootropolis**

Disney's great run of CG 'toons continues in this layered, politically subversive animals-as-cops tale. The 2.40:1 image quality is simply gorgeous, while the DTS-HD MA 7.1 soundmix bristles with activity.

**Deadpool**

Not a comic book caper for kiddies, this hyperactive, foul-mouthed smash hit lands on Ultra HD Blu-ray with aggressive Dolby Atmos sonics and a plethora of mirthsome extra features.



TOP 10 Blu-ray players

- 1**  **Panasonic DMP-UB900 → £600** ★★★★★
 Boom! The Ultra HD Blu-ray format gets an inspiring debut in Panasonic's multi-talented deck that offers welcome user tweaks and a sterling picture performance. Smart skills include 4K-enabled VOD apps. *HCC #259*
- 2**  **Oppo BDP-103D → £600** ★★★★★
 This deck adds Darbee Visual Presence processing to the already excellent AV skills of its BDP-103EU predecessor. Superb construction, usability and features/connections. *HCC #228*
- 3**  **Pioneer BDP-LX88 → £1,100** ★★★★★
 The Japanese corp returns to the disc-playing high-end with a universal deck that weighs more than your AVR and drips with user tweaks and processing features. Stonking performer. *HCC #246*
- 4**  **Oppo BDP-105D → £1,100** ★★★★★
 This heavyweight deck builds upon the premium picture performance of the BDP-103D with a wealth of audiophile upgrades – if you're serious about music, check it out. *HCC #234*
- 5**  **Sony UHP-H1 → £400** ★★★★★
 Likely to be its last top-line BD deck before Sony embraces UHD, this player pleases with wide-ranging audio support (including DVD-A!), exquisite construction and slick performance. *HCC #261*
- 6**  **Arcam FMJ UDP411 → £1,200** ★★★★★
 Pristine visuals – including upscaled SD – and a classy sonic performance grant this Arcam instant appeal. The design and build is commensurate with the premium price tag. *HCC #244*
- 7**  **Sony BDP-S7200 → £180** ★★★★★
 A Sony deck without the curious angular design, the BDP-S7200 offers SACD support, hi-res audio streaming and 4K upscaling that's worth investigation. Not too pricey, either. *HCC #239*
- 8**  **Cambridge Audio CXU → £900** ★★★★★
 Styled to match the brand's other CX components, this universal deck matches its audio and video chops with plenty of features, including Darbee and HDMI switching. *HCC #253*
- 9**  **Samsung UBD-K8500 → £430** ★★★★★★
 Ultra HD Blu-ray player that'll find fans courtesy of its sensible price point, connected smarts and eye-catching visuals. Build quality is a little uninspiring. *HCC #260*
- 10**  **Samsung BD-J7500 → £150** ★★★★★★
 This well-priced spinner offers twin HDMI outputs and multichannel phono audio for flexible system hookup, an appealing design, smart features and solid AV chops. *HCC #247*

TECH INFO: BLU-RAY PLAYERS

Matching your deck to your AV receiver: Blu-ray decks are designed to deliver top-notch images but Blu-ray is also about enjoying superior quality sound. When choosing a player, bear in mind the connectivity and decoding features of your AV receiver. If you're still using an older model that doesn't offer HDMI inputs, then you'll need a Blu-ray player with multichannel analogue audio outputs to enjoy decoded hi-res surround sound formats. Similarly, older but still HDMI-equipped receivers may not be able to cope with 3D/4K/HDR output signals, in which case you'll need a deck with dual HDMI outputs – one channelling audio to your receiver amp, the other piping video direct to your TV.

What about the PlayStation?: Sony's console still represents an easy path to hi-def heaven. For a low-budget home cinema system, the £150 PS3 Super Slim makes a decent choice – especially if you like playing games. Control via a joypad is a pain, though, and the console runs more noisily than most BD spinners. The more expensive PS4 is a much better gaming machine, and now available in a 1TB version.



DEMO DELIGHT

Star Wars: The Force Awakens: Disney's 1080p BD offers a reference-quality 2.40:1 image, finding detail and depth in the 35mm/75mm photography, and relishing the colour-rich environments of this blockbuster sci-fi. Awesome.

OPPO®
Blu-ray

At the top of everyone's shortlist



TOP 10 Projectors

**Sony VPL-VW520ES** → £8,800

The top dog in Sony's domestic SXRD projector range, this couples native 4K optics with HDR compatibility for a state-of-the-art performance. Capable of jaw-dropping imagery and offers plenty of install flexibility. *HCC #254*

**Epson EH-LS10000** → £6,000 ★★★★★

Debuting a laser light source (30,000 hours) and Epson's 4K enhancement processing, this large chassis model is a cinematic triumph. Essential audition for a dedicated room. *HCC #247*

**JVC DLA-X7000** → £5,700 ★★★★★

With contrast and brightness improvements over the more affordable DLA-X5000, this is a great bigscreen option, although its SDR performance impresses more than HDR. *HCC #259*

**Epson EH-TW7200** → £1,800 ★★★★★

Priced to appeal to those unable to dabble in the £3,000 market, Epson's mid-ranger is a great purchase. No frame interpolation on offer, but colours, contrast and brightness impress. *HCC #232*

**Sony VPL-HW65ES** → £2,800 ★★★★★

Bright, flexible Full HD projector with impressive image chops and decent calibration options. But you'll need to ask yourself if you really want a 4K model instead.... *HCC #258*

**ViewSonic Pro7827HD** → £600 ★★★★★

Pictures impress from this single-chip DLP budget option that carries a third HDMI input designed for smart sticks. Includes ISF calibration and 12V trigger. 3D spex are an optional extra. *HCC #261*

**JVC DLA-X5000** → £4,000 ★★★★★

Fourth-gen eShift projector marries its pixel-shifting talents with a contrasty performance, HDR support and HDMI 2.0a. Not the smoothest with motion, and price tag is considerable. *HCC #257*

**Optoma GT5000** → £1,000 ★★★★★

Ultra short-throw model with healthy brightness that makes sense for regular living rooms where a traditional install isn't possible. Casts Full HD images from just 30cm. *HCC #261*

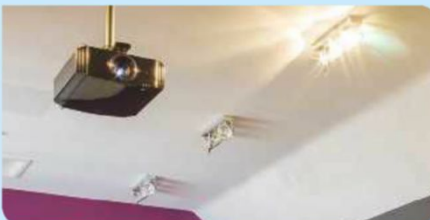
**BenQ W2000** → £800 ★★★★★

Average black-level performance limits this model's all-round appeal, but elsewhere this Full HD DLP budget PJ catches the eye with its calibration options and detailed visuals. *HCC #257*

**Philips Screeneo 2.0** → £1,500 ★★★★★

Philips retools its ultra short-throw PJ to now offer a Full HD resolution. Enjoyable imagery and easy setup, but some may miss the media player/LED lamp of its predecessor. *HCC #262*

TECH INFO: PROJECTORS



Installation: Although projectors can be temporarily placed on a cupboard, stand or shelf situated at the rear of the room (use the adjustable feet on its base to level the image so that it aligns with the screen), a much better long-term solution is to mount it on your ceiling with an appropriate bracket. Projectors can be quite heavy, though, so it's important to ensure that the bracket is attached firmly – ideally, it should be secured to a joist. Position your PJ so that an imaginary line from its lens to the opposite side of the room hits the screen exactly half-way along its width. The location of your screen should therefore dictate where your projector is. A decent tape-measure or laser pointer will help you to determine the position.

Throw distance: Throw distance specifies the distance between the projector and screen for a focused image of given size. As the vast majority of projectors are equipped with a zoom lens, minimum and maximum throw distances are often specified – say, 3.01m to 6.08m for a 100in. 16:9 image. Shorter throw distances are ideal for smaller rooms, and longer ones for larger rooms. Simple.

Throw ratio: Sometimes, a manufacturer will quote a throw ratio rather than a throw distance. This is basically the throw distance divided by the image width. To get the projected image size, divide the distance between projector and screen by the specified figure. Once again, the inclusion of a zoom lens means that upper and lower figures are usually specified.

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TOP 10 Speakers


- 


1 Monitor Audio Gold 300AV → £7,150 ★★★★★
MA revamps its Gold Series and we pay serious attention. This big-ticket package excels across the frequency range, offers exquisite design and packs setup flexibility via the dipole/monopole FX surrounds. *HCC #251*
- 


2 Q Acoustics 3000 5.1 Cinema Pack → £700 ★★★★★
A superior compact package with driver improvements over the previous 2000i series. The two-way cabinets and dual-driver sub combine to offer impressive audio for the money. *HCC #247*
- 


3 XTZ Cinema Series 5.1.4 → £3,700 ★★★★★
Spectacular dynamics, gut-thumping bass and a sense of scale that most systems at this price only dream of – XTZ's 3D audio-ready setup is an easy recommendation. *HCC #259*
- 


4 KEF R Series 7.1 → £6,500 ★★★★★
A 7.1 array mixing dipolar and direct surrounds, this authoritative package takes its cues from KEF's Blade concept speaker and offers faultless, largescale home cinema sonics. *HCC #217*
- 

5 Monitor Audio Bronze B5 AV → £1,500 ★★★★★
Like their Gold siblings, these feature switchable surround speakers and MA's C-CAM drivers. Smaller in stature and output, but eminently more affordable. *HCC #254*
- 

6 Wharfedale Diamond 220 HCP → £850 ★★★★★
This package offers a lot for less than a grand – two-way surrounds, a potent three-driver centre channel and agile subwoofer. Great movie sound and excellent build. *HCC #248*
- 

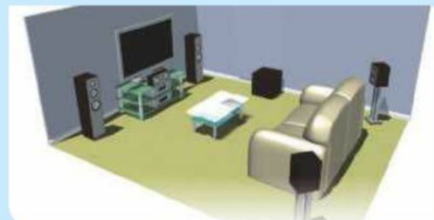
7 ELAC Debut 5.1.2 → £1,950 ★★★★★
Well-priced floorstanding Atmos system that manages to balance subtlety and precision with an exciting delivery. Subwoofer includes app-based room EQ. *HCC #262*
- 

8 DALI Opticon 5.1 → £3,200 ★★★★★
The Opticons employ driver designs created for DALI's higher-end models, and showcase a talent for both involving music presentation and high-octane home cinema. *HCC #260*
- 

9 Tannoy Revolution XTF 5.0 → £2,000 ★★★★★
The entry-level for Tannoy's Dual Concentric driver tech, the XTFs have real all-round appeal – the sound is both energetic and balanced. You'll need to add a sub, of course. *HCC #258*
- 

10 Q Acoustics Concept 5.1 Cinema Pack → £1,750 ★★★★★
Step-up Q Acoustics offering with handsome floorstanders joined by standmount surrounds employing the Concept Gelcore construction. Classy, consistently neutral performance. *HCC #257*

TECH INFO: SPEAKERS



Centre speaker: Handles most of the dialogue and onscreen effects. Should be positioned above or below the screen as close to it as possible. Of course, if you're using a projector screen, it should ideally be placed behind it.

Front speakers: Left and right speakers should be positioned either side of the screen, in line with the centre. Turn the speakers in slightly to face the listener if there isn't an even movement of sound across the front of the room.

Subwoofer: Can be positioned wherever it sounds best or can be tucked out of sight due to the non-directional nature of low-frequency signals. Be aware that close positioning in corners or next to walls can create a boomy effect.

Surrounds: Position alongside the listener, pointing in or slightly behind the ears for a good surround effect. The back wall is not a good position for surrounds – it is, in fact, where you should locate the sixth and seventh speakers (rears) in a traditional 7.1 array.

DEMO DELIGHT

Deadpool: A bonus treat for buyers of this flick on Ultra HD Blu-ray (as it's not included on the 1080p platter) is Fox's first Dolby Atmos track. The soundmix keeps pace with *Deadpool*'s visceral, kinetic approach, proffering hyperactive effects placement, appreciable soundstage depth and a rich, boisterous LFE channel.

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Photo courtesy of UK Home Cinemas

TOP 10 AV Receivers/AV Processors

**Onkyo TX-NR3030** → £2,500

★★★★★

The big daddy of Atmos AVRs, this 11-channel design enables four height speakers to be added to an existing 7.1 array with ease. Lithe on its feet and with exemplary steering, this is multichannel audio at its best. *HCC #245*

**Denon AVR-X7200WA** → £2,500 ★★★★★

Now upgraded to DTS:X, and sporting HDCP 2.2 support, this Atmos AVR is as futureproofed as it gets. Only a nine-channel design, though. *HCC #248*

**Arcam AVR850** → £4,200 ★★★★★

High-end seven-channel AVR marrying Class G amplification and Atmos (and future DTS:X) support with talented Dirac Live Room EQ. 11-channel pre-outs for full-fat setups. *HCC #257*

**Marantz AV8802A** → £3,350 ★★★★★

This 11.2-channel next-gen processor (Atmos, DTS-X and Auro-3D) is an obvious upgrade for a high-performance separates system. Luxuriant, natural sound quality. *HCC #253*

**Trinnov Audio Altitude32** → £27,000 ★★★★★

Capable of outputting 32 discrete channels and mapping Dolby Atmos, DTS:X and Auro-3D sources to any setup via advanced EQ. Only premium cinema owners need apply, though. *HCC #262*

**Marantz SR7010** → £1,100 ★★★★★

Featuring typically sultry Marantz styling, this 9 x 125W receiver has an extensive feature roster (hi-res networking, object-based audio, etc) and a smooth, cohesive soundstage. *HCC #261*

**Pioneer SC-LX89** → £2,100 ★★★★★

Controlled but lively-sounding 9.2-channel AVR (Atmos, DTS:X) that's packed with tweaks. MCACC calibration impresses, but the overall complexity here could be a turn off. *HCC #256*

**Yamaha RX-A550** → £550 ★★★★★

Only a 5.1-channel model – and subsequently not endowed with Atmos/DTS:X chops – the RX-A550 impresses with its audio performance, design and networking features. *HCC #252*

**Cambridge Audio CXR120** → £1,500 ★★★★★

This Brit-designed 7.2-channel receiver focuses on performance and ignores object-based audio and built-in Bluetooth. Sound quality is assured and construction is monstrous. *HCC #251*

**Onkyo TX-RZ800** → £1,050 ★★★★★

Feature-packed (DTS:X, HDCP 2.2) and sporting a new, clean design, Onkyo's mid-priced nine-channel AVR is easy to use and sounds sprightly, if a little short on aggression. *HCC #253*

TECH INFO: AV RECEIVERS



Tackling new heights: A recent innovation in AVR circles is the introduction of Dolby Atmos, the object-based sound format that has taken off in commercial cinemas and is supported in the home by the likes of Onkyo, Pioneer, Denon, Marantz and Yamaha. This requires new height speakers in addition to a regular 'flat' 5.1 or 7.1 speaker configuration. The heights can either be physically mounted in/on your ceiling, or provided via up-firing reflective models. Setup can be complex, but the results are certainly impressive. Atmos-encoded Blu-rays are a bit thin on the ground, but you can use Dolby Surround post-processing with regular 5.1/7.1 soundtracks to get the most from your new AVR/speakers. Rivals to Atmos are Auro-3D, which uses height speakers in a different configuration, and DTS:X. Most AVR brands have pledged support for the latter; software is beginning to arrive.

How much power?: Many of the mass-market AV receiver manufacturers are involved in a specifications race to see who can say their model is the most powerful, which can be confusing for consumers. For instance, both Krell's £7,000 S-1500 seven-channel power amp and Yamaha's £500 RX-V675 both claim 7 x 150W – the important part is that Krell's figure is into an eight-ohm load with all channels driven, and that Yamaha's is with one channel into a four-ohm load, which is hardly a real-world situation. The best advice is ignore the numbers game and get a demo of your desired AVR with the same, or similar, speakers that you intend to partner it with.

TOP 5 Bonus features

**The Trouble with Titian Revisted**

Arrow Video's Blu-ray of '60s Roger Corman horror *Blood Bath* includes four different cuts of the movie plus an 81-minute doc helping you make sense of its bizarre production history.

★★★★★

**Secrets of the Force Awakens...**

This 70-minute *Making of...* feature accompanying the latest *Star Wars* flick is essential viewing for franchise fans, going into detail about director JJ Abrams' production processes.

★★★★★

**Pawns No More: Making The Hunger Games: Mockingjay – Part 2**

Who expected this action flick to be accompanied by an epic 141-minute eight-part doc that covers practically everything about the film's production?

★★★★★

**The Life, Legacy and Legend of Don Borchers**

Brilliant documentary addition to the *Children of the Corn* Trilogy boxset focusing on the career of producer Don Borchers. Stuffed with insight, humour and Hollywood tales.

★★★★★

**Production Diaries**

A bumper collection of featurettes accompanying *Bad Boys II* on BD. Image quality may be standard-def, but there's plenty of input here from Bay and insight into his madcap filmmaking world.

★★★★★

TOP 10 Subwoofers

- 

SVS SB-2000 → £600 ★★★★★
This follow up to the SB-1000, which incorporates a new 12in driver and revamped Sledge DSP amplifier, offers immense value for money. A mid-sized woofer that imbibes your Blu-rays with potent LFE, the SB-2000 sounds quick and taut, and is a perfect introduction to what a truly good sub can accomplish. *HCC #233*
- 

REL 212SE → £2,750 ★★★★★
Lush design joins engineering nous in this premium sub with two active 12in drivers supported by a pair of passive radiators. Loud, deep and impactful, your BDs are in safe hands. *HCC #246*
- 

JL Audio Fathom f212v2 → £6,500 ★★★★★
A second-gen outing for JL's 2 x 12in monster, with an increase in power (now 3,600W) and improvements to the room EQ system among the changes. Sounds as good as you'd imagine. *HCC #261*
- 

REL S-5 → £1,600 ★★★★★
A step up from REL's affordable T series, this 12in model is large and weighty, with a performance level to match. Fast and tight but capable of dropping very low indeed. *HCC #234*
- 

Bowers & Wilkins PVID → £1,200 ★★★★★
One of the coolest-looking subs on the planet, B&W's PVID uses DSP trickery to craft an opulent low-end performance. The touch-sensitive OLED display is pure class. *HCC #212*
- 

BK Electronics P12-300SB-DF → £475 ★★★★★
Bass heads can get outrageous value for money in the shape of BK's overperforming 12in sub. A front-firing model is also offered, and other finishes knock the ticket down to sub-£400. *HCC #247*
- 

ELAC SUB 2070 → £1,300 ★★★★★
A dual-driver, 600W sealed sub with control and onboard EQ system driven by a free Android/iOS app. Meaty, assured performance, with useful tweaks offered. *HCC #261*
- 

JL Audio Dominion d108 → £900 ★★★★★
Compact subwoofer that employs an innovative 8in driver (and a 500W amp) to go bigger and deeper than you might imagine. Compatible with JL Audio's JLink wireless system. *HCC #260*
- 

Eclipse TD520SW → £3,000 ★★★★★
This twin 8in woofer, driven by ICEpower amplification, aims for ultimate speed and tone – and succeeds. Simply put, the TD520SW is worth every penny of its asking price. *HCC #249*
- 

Artison Nano 1 → £800 ★★★★★
Artison's media room-friendly woofer tucks twin 6.5in bass drivers and a 300W amp into its compact frame. Bass extension isn't the deepest, but this is tight, fast and heaps of fun. *HCC #253*

TECH INFO: SPEAKERS



Why use more than one sub?: Using two subwoofers (or perhaps four) should, in theory, bring huge rewards in terms of bass performance. But remember that LFE is a tricky beast to control. Running two subs may simply double problems in your room like room boom and suck-outs, where outgoing and reflected bass sounds cancel each other out. If you have some flexibility in where you place subwoofers, trial and error may well throw up some interesting results. The acoustics wizard Floyd E Toole (his book *Sound Reproduction: The Acoustics and Psychoacoustics of Loudspeakers and Rooms* is fine bedtime reading) suggests one LFE sub to either side of the room may be best for accuracy while placing them in the front corners would be best for overall bass power. Yet there is no hard and fast rule as to what will work best for every room, and you may find that simply using one (large) subwoofer is preferable as it's the easiest to get sounding right.

DEMO DELIGHT

San Andreas: This brilliantly over-the-top SFX-heavy disaster flick magicks up a scenario where both downtown Los Angeles and San Francisco (not to mention the Hoover Dam) are hit by mega earthquakes, and its Atmos mix is subsequently loaded with LFE. Buildings topple and pavements tear apart with real fear-inducing weight, keeping your sub on its toes for much of the 110-minute running time.

TOP 5 Console games



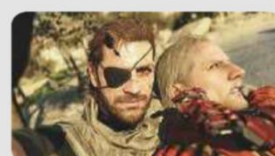
Tom Clancy's The Division
Ubisoft's long-gestating online multiplayer RPG/shooter proves worth the wait, courtesy of its well-realised future New York environment, varied gameplay (including solo missions) and grin-inducing weaponry. ★★★★★



LEGO Marvel Avengers
The best platform/puzzler yet from the TT Games LEGO... franchise. Packed with your favourite Marvel characters, it takes plot queues from the blockbuster movies. Smart, funny and offers plenty of game-time. ★★★★★



Dead Souls III
Third-person action-filled fantasy sequel with excellent visuals (particularly the terrifying bosses) and improved game mechanics over previous entries in the franchise. Challenging – but rewarding – gameplay. ★★★★★



Metal Gear Solid V: The Phantom Pain
Our pick for 'Game of the Year' in 2015, this open-world stealth/actioner dazzles with its breadth, interaction, flexibility and lush visuals. A fitting end to the legendary series. ★★★★★



Uncharted 4: A Thief's End
The final entry in this blockbuster franchise is simply epic, both in terms of gameplay (driving, puzzle-solving, stealth battles...) and the exquisite 1080p visuals. Roll on next year's movie adaptation! ★★★★★

TOP 10 Accessories

- 1 KEF R50 → £600 ★★★★★**
 KEF's Dolby Atmos-enabled reflective modules are a smart choice for anyone looking to beef up their speaker system. Using the company's Uni-Q point source drivers pays real dividends, enabling full-range sonics that reach deep into your cinema room. Styling and build quality are first rate. £600 gets you a pair – you'll soon want four... *HCC #252*
- 2 Amazon Fire TV 4K → £80 ★★★★★**
 Amazon reboots its media player to include 4K video prowess, greater storage capability and a souped-up engine. The result is an intuitive add-on that's ideal for 4K TV owners. *HCC #254*
- 3 Nvidia Shield Android TV → £150 ★★★★★**
 The Android TV platform gets the hardware it deserves – this stylish set-top box offers potent processing, resulting in a slick gaming and media playback experience. 4K capable. *HCC #262*
- 4 Asus RT-AC87U → £160 ★★★★★**
 A high-spec router can help you get the best from home media streaming – this feature-laden dual-band Asus impresses with speed and range and customisation options. *HCC #259*
- 5 QNAP HS-251 → £300 ★★★★★**
 Adding HDMI connectivity to a NAS device is surprisingly useful – and this slim-line model from QNAP is styled to grace your living room. Flawless media playback and responsive. *HCC #248*
- 6 Now TV → £15 ★★★★★**
 Among the new tricks of this second iteration of Sky's compact streamer are 1080p output, microSD and USB inputs and a faster processor. And it's still ridiculously affordable. *HCC #253*
- 7 Pioneer XDP-100R → £500 ★★★★★**
 Android-based hi-res audio/video player that's ready for MQA files and sounds smooth and detailed. The 720 x 1,280 screen (4.7in) is up to the job with VOD apps and games. *HCC #256*
- 8 Philips Hue → £180 ★★★★★**
 These Wi-Fi-enabled lightbulbs might be expensive (this £180 starter pack includes two, plus the Wi-Fi bridge) but making your own multicoloured lighting scheme is a blast. *HCC #220*
- 9 Logitech Harmony Elite → £270 ★★★★★**
 Flexible and relatively easy to set up, this all-in-one remote package combines touchscreen handset and hub with smart device app. Worthwhile if you have a stacked kit rack. *HCC #256*
- 10 Devolo dLAN 550 Wi-Fi Starter Kit → £100 ★★★★★**
 Affordable Powerline option bringing stable data transmission (plus Wi-Fi) to an additional zone via mains wiring. Extra plugs sold separately for £60. Not the fastest around. *HCC #260*

TECH INFO: MEDIA PLAYERS



What about my TV?: Most flatscreen TVs from the major brands (Sony, Samsung, Panasonic, LG, Philips, Hisense, etc) also incorporate media player functionality, using Ethernet or Wi-Fi to stream from your home network, or from plugged-in USB drives. Most modern Blu-ray players offer this, too. However, file support is rarely as extensive as on dedicated devices from the likes of Western Digital and A.C. Ryan, and our experience shows some are more adept at playback from USB than over a network. Nor (obviously) is a TV or BD player portable. If your media collection extends beyond JPEGs and MP3s into lossless audio rips and esoteric HD video formats, then a standalone player is a good investment.

Storage: You can, if you really want, store all your files on a plethora of USB drives, or on your PC, but it's best to get a NAS (Network Attached Storage) device for simplified sharing of your media across a network with



multiple players, such as one from Netgear's ReadyNAS range (pictured). These dedicated devices often offer RAID array file backup, and are managed via browser software. Storage capacity can be anything from 1TB to 12TB and beyond.

TOP 5 Blu-ray/DVD boxsets

**American Horror Project: Volume One**

First in a planned series of boxsets focusing on forgotten US fright flicks, this collects a trio of solid '70s horrors (with variable image quality) and bundles them with plenty of extras.

★★★★★

**Doctor Who: The Complete Ninth Series**

Peter Capaldi's sophomore year as the Time Lord packs 12 superb episodes plus the 2014/2015 Christmas specials. This BD set carries 1080i/50 encodes and DTS-HD 5.1 soundmixes.

★★★★★

**Mr. Robot: Season One**

Brilliant tech-infused TV thriller/drama series that already has us psyched about Season Two. Music-minded DTS-HD Master Audio 5.1 mixes grace this boxset's ten Full HD encodes. Not many extras, though.

★★★★★

**Dissent and Disruption: Alan Clarke at the BBC (1969-1989)**

Mega boxset with a mega price tag (£150) featuring a comprehensive collection of Clarke's work spread across 11 BDs and two DVDs.

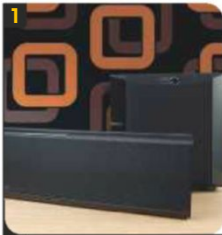
★★★★★


**Banshee: The Complete Third Season**


US drama series that dazzles with its action set-pieces. This 10-episode third run, split across four discs, offers superb 1080p encodes and suitably bruising DTS-HD MA 5.1 mixes.


★★★★★


TOP 10 Soundbars & Soundbases


- 


Yamaha YSP5600SW → £1,900 ★★★★★
 With its 46 drivers (including upfiring) this premium 'bar delivers precisely-steered and immersive audio, even of the Atmos variety. Potent wireless sub and 4K-capable HDMI switching sweeten the high-end deal. *HCC #254*
- 


Canton DM55 → £330 ★★★★★
 Canton's smallest soundbase still delivers big sonic thrills. Twin woofers underpin clean and crisp mids and highs, and build quality is first-rate. Doodle to use. Bluetooth built-in. *HCC #260*
- 


Sony HT-XT3 → £450 ★★★★★
 A great-sounding soundbase blessed with HDMI connectivity, HDCP 2.2, Wi-Fi, Bluetooth, multiroom support, screen mirroring and app control. There's little to complain about. *HCC #250*
- 


Geneva Model Cinema → £550 ★★★★★
 The Swiss brand comes up trumps with this five-driver Bluetooth-capable soundbase. It musters a massive sound with huge dynamics, rich bass and articulate highs. *HCC #261*
- 

Q Acoustics Media 4 → £330 ★★★★★
 A no-nonsense offering from the speaker specialist, which ignores HDMI inputs and daft DSP modes in favour of creating a nuanced, solid 2.1 soundscape. *HCC #238*
- 

Canton DM100 → £530 ★★★★★
 An assured 2.1 performance delivered by an eight-strong array of separate tweeters, mid-range and bass drivers in a 1m enclosure. Suited to the large screens of today's 4K world. *HCC #253/#261*
- 

Sony HT-RT5 → £500 ★★★★★
 Sony joins the growing 'soundbar with wireless surrounds' market with an enjoyable debut that packs some worthwhile DSP modes and plenty of media-savvy functionality. *HCC #257*
- 

DALI Kubik One → £800 ★★★★★
 The Danish speaker brand brings a slice of glamour to your setup with this stylish soundbar. No HDMI or digital decoding but it packs a tight, lively and nuanced sound. *HCC #248*
- 

Yamaha YSP-1600 → £500 ★★★★★
 With support for Yamaha's MusicCast multiroom and a tasty low-end even without a subwoofer, this 'bar is a solid one-box solution. Single HDMI in/out, old-fashioned UI. *HCC #258*
- 

Orbitsound A70 → £500 ★★★★★
 Not overly specified – there's no HDMI, for instance – but this elegant 'bar/sub combi just about justifies its price tag with an enveloping and very well-balanced performance. *HCC #251*

TECH INFO: TV PLATFORMS



TV addicts – go free, or pay-to-view?:

The analogue switch-off has created a competitive market in free-to-air platforms, while Sky and Virgin Media are squaring up to the likes of EE TV, Amazon Prime and Netflix. Deciding which service is right for you can be complex, and you may find your needs are best catered for by a combination.

Sky+HD: The long-running satcaster offers a plethora of HD channels, with content including recent movie releases, live sports and sought-after US shows. Hardware options include the 2TB dual-tuner PVR. An upgrade, dubbed Sky Q, is arriving soon, and will offer 4K support among its tricks.

Virgin Media TiVo: The cable giant offers a three-tuner PVR (1TB) with intelligent TiVo recording tricks, catch-up apps (including Netflix and Spotify), and over 240 channels (depending on package). Premium Sky content can be added on a monthly basis.

Freeview: Common option when it comes to TVs and STBs. Freeview offers 13 HD channels plus SD and radio. Freeview Play adds IPTV integration to the EPG – and you'll find it on some Panasonic TVs.

Freesat: Satellite service offering a similar – but not identical – channel lineup to Freeview, delivered via a dish but without a subs cost. Budget-priced STBs are available.

YouView: This relatively new kid on the block integrates the UK's main catchup portals directly into a backwards EPG. Again, channels are broadly similar to Freeview and there's no contract. Humax (PVRs) and Sony (TVs) are leading the hardware charge.

TOP 5 Back-catalogue Blu-rays



Bad Boys/Bad Boys II: 20th Anniversary Edition
 The first time Michael Bay's brash sequel has been available on Blu (joined by the original). It arrives with an eye-popping HD image, zippy DTS-HD 5.1 mix and lots of archival extras. ★★★★★



The Tragedy of Macbeth
 Roman Polanski's brutal 1971 Shakespeare adaptation is chosen as one of the first Criterion Collection Blu-rays to hit the UK. A new hour-long doc is the pick of the extra features. Audio is 3.0-flavoured. ★★★★★



Killer Dames: Two Gothic Chillers by Emilio Miraglia
 Double bill of terrific '70s murder mysteries from the Italian giallo director bundled into a fan-pleasing set with chat tracks, featurettes, trailers, interviews and a 60-page booklet. ★★★★★



The Third Man
 StudioCanal takes a second stab at releasing this celebrated 1949 Brit-noir starring Orson Welles, rewarding buyers with an excellent image taken from a 4K restoration plus some new documentary material. ★★★★★



Citizen Kane: 75th Anniversary Edition
 Warner's excellent 4K restoration of this classic flick gets a UK outing on a premium Blu-ray release – extras include commentary tracks, a 48-page book and more. ★★★★★



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TOP 5 PVRs



Virgin Media TiVo, £subscription

This triple-tuner PVR offers recording flexibility, useful features – you can undelete deleted shows! – and smart TiVo functionality. If you're in a cable area, consider it.

★★★★★



Sky Q, £subscription

Sky's new top-tier product offering dazzles with its image-rich user interface, wireless multiroom skills and recording flexibility delivered by the PVR's 12 tuners. Ready for 4K content when it finally comes.

★★★★★



Humax HDR-1100S, £190

Freesat Freetime PVR that impresses with its usability, VOD options and form factor – Humax's small, white box will slot into any kit rack. We tested the 500GB version – 1TB and 2TB models are also available

★★★★★



Humax DTR-T4000, £subscription

This YouView-based PVR is required to get BT Sport's new Ultra HD channel – available to those with BT fast fibre and a BT TV sub. Easy to use and with 1TB of storage

★★★★★



EE TV Smart Box, £subscription

This quad-tuner 1TB PVR, from the mobile/broadband corp, offers innovative Replay 24-hour channel recording and great Smart device streaming. Needs more catch-up though

★★★★★

TOP 5 Headphones



Sony MDR-HW700DS, £800

Comfy cans supplied with an HDMI surround processor, enabling multichannel audio to be fed to a virtual 9.1-channel soundstage. The effect is superb – great for late-night listening

★★★★★



Sony MDR-1ABT, £300

Another cracking Sony pair with a good sonic balance, here with integrated Bluetooth allowing for cable-free movie watching (although they can be used wired too). Large design perhaps not suited to travel

★★★★★



Lindy Cromo NCX-100, £100

A cost-effective domestic option and great for travelling, these noise-cancelling 'phones (which can also be used as a normal passive design) feature a pleasant, balanced sound

★★★★★



PSB M4U1, £220

Aimed at both home and on-the-move use (and supplied with a carry case and two cable options), the M4U1s offer solid bass response and impactful highs. Build quality is good, as is comfort

★★★★★

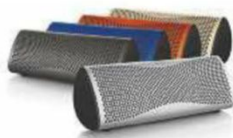


Beyerdynamic T70, £330

Closed-back cans with excellent weight distribution for a comfy fit and a sound that doesn't put a foot wrong. These motor through movie soundtracks with vigour, clarity and a solid low-end

★★★★★

TOP 5 Wireless speakers



KEF Muo, £300

Portable Bluetooth speaker that's a cut above much of the competition. KEF's sonic knowhow results in a punchy, dynamic presentation that cherishes lossless rips. Excellent build quality

★★★★★



Sony SRS-X11, £60

An affordable palm-sized Bluetooth speaker with internal rechargeable battery, Sony's SRS-X11 is supremely portable and sounds decent for the money. A neat little gizmo. Get two and they can work in stereo

★★★★★



Samsung WAM7500, £500

Also known as the R7, this addition to Samsung's multiroom system delivers authentic omnidirectional sonics via its super-stylish oval-shaped enclosure. Expensive, but excellent

★★★★★



Simple Audio Listen, £400

Desktop stereo speakers with Bluetooth support, these benefit from separate tweeter/midbass units and a classy construction. Performance is well-balanced, and a subwoofer output is offered for extra bass

★★★★★



Star Wars Bluetooth speakers, £150 each

Bring a touch of fun to your tunes with these Stormtrooper and C-3PO replica Bluetooth speakers from ACWorldwide. Solid sound quality and gorgeous styling

★★★★★

HOME CINEMA

Choice

→ IN THE NEXT ISSUE

Drive-in home cinema Stunning garage install
Meridian We talk MQA and high-end loudspeakers with the forward-thinking UK audio brand
EISA Awards 2016/2017 Winners revealed from home cinema receivers to 4K displays

→ HARDWARE

LG E6 OLED TV **Revel F35 5.1 speaker system**
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CONTENTS SUBJECT TO CHANGE – BUT ONLY FOR THE BETTER

ISSUE
 #264 ON SALE
 Sep 1



AV Avenger

New formats – and a potential 8K TV future – mean that it may be time to have a serious think about where you've got your sofa. **Steve May** shares his views on viewing distances

PULL UP A seat. No, really, do. Because wherever you watch TV from is probably wrong. Or will be.

There have always been rules touted for TV viewing distances. Back in the day, I really didn't take them seriously. They inevitably dictated how far back you should be from the screen. Given that I'm the guy who usually sits in the front row of the cinema (not IMAX, though, I'm not a masochist), I was never going to pay much attention when told to drag my bean bag to the back of the room.

4K is entirely different. New rules dictate we sit closer. I can get behind this. The simple fact is there's an undeniable correlation between screen resolution and viewing distance. The further back you sit, the less fine detail you can resolve. That's why, when asked, I always tell buyers stepping up from HD to UHD to either a) buy a significantly bigger telly than their current one, or b) move the couch forward.

This raises eyebrows. It's ironic that AV enthusiasts who spend hours fine-tuning speaker placement for stereo and multichannel sound, often refuse to take their viewing distance seriously.

The height of my obsession

For years we've been told the suggested viewing distance to appreciate vanilla-flavoured HD is over three picture heights back from the screen. Yet with UHD displays, the ITU guidelines for critical viewing posit that as little as 1.6 picture heights could be best. Even with a 55in or 65in screen that's not far at all. The picture height on my 65in 4K TV is about 80cm, making my optimum realistic viewing perhaps less than 1.5m.

If you've already bought a 4K TV, you've probably not given a great deal of thought to all this, because there's simply not been enough native content to warrant breaking out the measuring tape. But the

arrival of Sky Q UHD changes all that. Suddenly, 4K is looking like an everyday proposition. Many will want to make the most of it.

There are additional considerations, though. The closer you sit to a 4K display, the more likely you are to see motion artefacts. As the image fills your field of vision you become more attuned to angular motion – and the higher the resolution, the greater the number of motion artefacts you'll be able to resolve.

The solution to this is to watch at a higher frame rate. This becomes particularly important with sports. Sky's Premier League coverage will be at 2160/50p, which is in line with the DVB's 4K UHD Phase 1 specification. **But higher frame rates, with screens able to display them, are much further away.** It's not until 2019 that the DVB's UHD Phase 2 Conformance Point B specification lands, which adds higher 100/120fps frame rates, aka HFR TV.

And at that point, the whole viewing distance/resolution debate starts to get really interesting. The screen resolution *du jour* then may well be 8K (yes, it's really coming). And these hyper resolution displays will be even more demanding in terms of furniture placement. The ITU recommendation for critical viewing distance of 8K UHD is as short as 0.8 picture heights. So 65in screens will be the absolute minimum; more likely TVs will be 75in plus.

Ultimately, I think higher resolution displays will completely change the way we think about home cinema. It'll be more immersive, and in-yer-face. Smaller viewing rooms could therefore be destined to become the ideal space for bigscreen viewing. Time to plan that cupboard conversion? ■

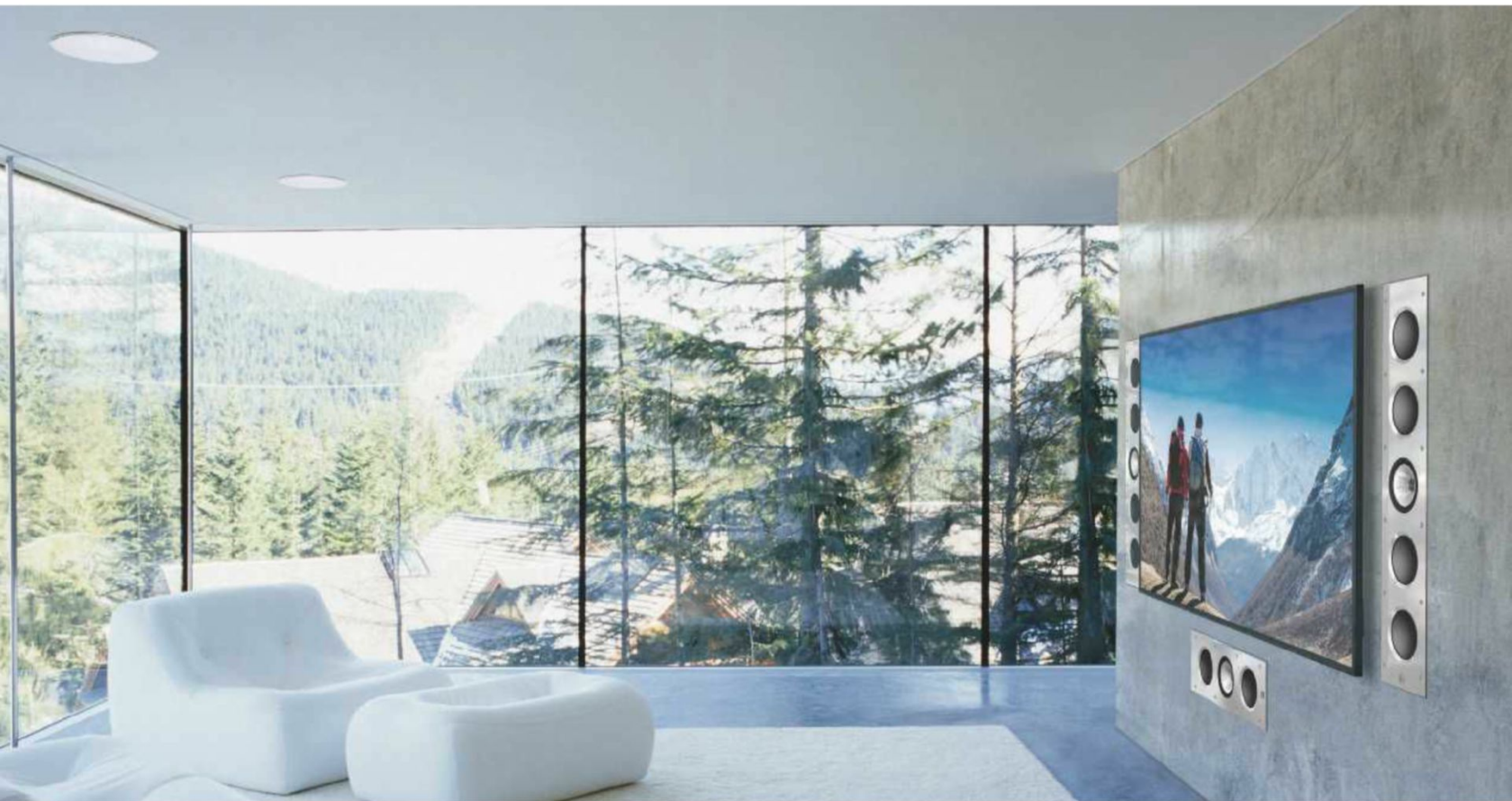
Have you considered viewing distance in your setup? Let us know: email letters@homecinemachoice.com

The prospect of high frame-rate sports is almost enough to get **Steve May** trying to learn the offside rule once and for all





Ci SERIES



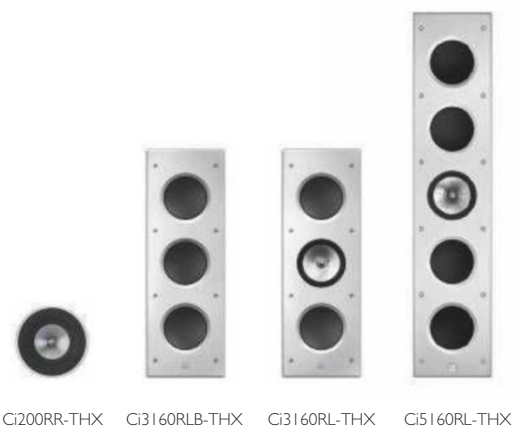
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